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THE BIENNIAL REPORT
OF THE
BOARD OF TRUSTEES
OF THE
Agricultural College of Utah
For the Years 1907, 1908.

Accompanied by

The Report of the President, and Secretary's Report of the
Receipts and Disbursements.

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THE BIENNIAL REPORT OF THE BOARD
OF TRUSTEES

OF THE

Agricultural College of Utah,

For the Years 1907 and 1908.

To the Governor and Legislative Assembly of Utah:

The Board of Trustees of the Agricultural College of Utah have the honor to present their report for the biennium from January 1, 1907, to December 31, 1908.

Detailed statements of the work, conditions and needs of the College may be found in the reports of the President of the Faculty and the departments of instruction and investigation, herewith submitted. A full statement of receipts and expenditures during the past two years and an inventory of the College property will be found in the appended biennial report of the Secretary of the College.

We have pleasure in reporting a surprisingly large increase of students during the past two years; and also that the grade of the students entering the College is very much higher than in the past. At the present writing, the number of college students is 35 per cent. larger than the highest number recorded in any previous biennium. The removal of the work in engineering from the Agricultural College caused a distinct loss of a certain class of students, yet the schools of agriculture, domestic science, commerce and mechanic arts each have a larger enrollment than ever before. The growth of the agricultural work has been especially gratifying, for, during the biennium, the number of students taking agriculture has more than doubled.

The Faculty has been strengthened and in part reorganized to meet present conditions; and a definite industrial policy, resting upon sound educational ideals, has been adopted for the whole Institution. Internally, the condition of the College is excellent. The discipline of students and Faculty is of the best and harmony prevails among the Trustees, Faculty and Student Body.

The small appropriation made by the last Legislature made it difficult to continue the College as formerly organized and at the same time to satisfy the demands of the increased Student Body. To comply with the increased demands and at the same time to keep pace with general educational progress it has been necessary to observe the strictest economy in all expenditures. In fact, we have been able to do only the most necessary work in behalf of the Institution. Buildings, heating plant and water works have all suffered in some degree from the lack of necessary repairs, and the equipment of the various departments has been increased very slightly. This condition has made it difficult to do the best work. However, we have attempted to the best of our ability to use the money appropriated for the maintenance of the School in the very best possible way, and we believe that an examination of the accounts of the Institution will show that the College funds have been wisely used.

For the coming biennium, if the College is to maintain its present position among other similar schools and if it is to be of the greatest service to the State, a larger appropriation must be made. We realize that the College can not grow more rapidly than the State, yet the institutions of the State, if maintained at all, should be enabled to do honor to the people. If an appropriation like that of the last Legislative Assembly be made at the coming session of the Legislature, it will be necessary to reorganize and reduce materially the present work of the Institution.

After careful deliberation the estimated requirements and income of the Institution may be stated as follows:

Required for general maintenance. .	\$242,700.00
For woman's buildings with equipment. (Remodeling of the dormitory)	20,000.00
For veterinary hospital, stock judging pavilion and incubator cellar	6,600.00
Total for maintenance and new buildings	\$269,300.00
Estimated income	110,000.00
Total amount required from the state	159,300.00
In addition, The Experiment Station asks for a publication fund of	5,000.00

We heartily approve of the recommendations made by the President of the Faculty in his report and trust that the appropriations asked for may be granted.

Respectfully submitted,

LORENZO N. STOHL,
President Board of Trustees,
Agricultural College of Utah.

December 16, 1908.

President's Report.

To the Board of Trustees of the Agricultural College of Utah:

The President of the College has the honor to submit herewith the following report of the work of the College for the past two years, together with an estimate of the requirements of the Institution for the two years beginning July 1st, 1909. More detailed statements of the work and needs of the College may be found in the reports of the heads of departments, included in the appendix.

THE EDUCATIONAL POLICY OF THE COLLEGE.

Undoubtedly, of more interest to the people of Utah than the increased attendance, the strengthened Faculty and the reduced cost of maintenance is the mission of the Agricultural College of Utah in behalf of the advancement of the State. The degree and kind of service given to the community by a public institution should determine the kind and degree of support given in return by the State.

The educational policy of the College conforms to the will of the people as expressed in various laws by the State and the Federal Government. Into these laws may be read the acceptance of three great principles of modern educational philosophy. First, that education shall be brought within the reach of the masses of the people; second, that education shall aim to prepare men and women for the real work of the world of any or all kinds, and third, that the applications of modern science have made the common pursuits desirable from an intellectual and financial point of view.

Among the enduring expressions of public belief in the principle of equal educational opportunities for all are the free public schools; free text-books; free public high schools, and free public colleges and universities. The establishment of the principle of universal education is still in progress, and upon it will be based many coming reforms. In harmony with this principle

the Agricultural College has placed emphasis not only upon strictly college work, but upon practical short courses in the various departments and upon extension work throughout the State.

The second principle demands that education must be practical, that is, capable of being used profitably in the daily affairs of the community. Consequently, all

Education for necessary human pursuits are the legitimate daily use. concerns of education. The farmer and the

physician; the housewife and the lawyer; the artisan and the minister, must find equal opportunities in the public institutions of learning, for preparation for their respective life pursuits. Moreover, since the farmer and the physician are equally necessary in the world's work, and there are about ten farmers for every physician, ten times more emphasis should be placed in the scheme of education on farming than on medicine. In obedience to this principle the courses of instruction in the College have been extended to conform with the industrial needs of the State, and the subjects included in them have been so arranged as to give the students greater power over existing conditions. The organization of new courses in various branches of agriculture, in forestry, in veterinary science, in domestic science, in commerce and in mechanic arts, may thus be explained.

The third principle implies that in the light of modern knowledge discipline of the mind may be gained by study in any of the developed departments of knowledge.

Common Agriculture, domestic science, commerce and engineering, studied scientifically, are equal in pursuits made intellectually educational value to any of the so-called learned professions. The various branches of mechanic desirable. arts are likewise being developed under the influence of modern knowledge, and are rapidly becoming as desirable as any other profession.

A main purpose of the institutions to which the Agricultural College belongs, is to throw the light of intelligence into the pursuits of the majority of mankind, and thus to make, as far as possible, all necessary pursuits equally valuable, in giving daily mental and physical joy. A phase of this principle teaches that hand labor should be coupled with head labor for the truly happy life. This requires a natural co-ordination of mind and body in life's pursuits. In obedience to this doctrine the College has attempted to turn as

many as possible of its students into activities not included in the older "learned" professions, by showing the real possibilities of happiness in the professions that the majority of men must follow.

Upon this interpretation of the governing laws, the Agricultural College of Utah rests its policy. It hopes to be the school of the people, because it meets the educational needs of the majority. It frankly admits that it plans to train farmers, housewives, business men and mechanics, but it hopes to train them so that they may feel daily the keen joy which accompanies any pursuit that has been dignified by intelligent mastery. It hopes to make of its College graduates the peers of any professional class with a similar degree of training. It means to devote itself to the special needs of Utah; to discover her natural resources, and to train men to develop successfully these resources.

The reports of progress that follow should be read with this policy in mind.

THE FACULTY.

Second in importance only to the policy of an educational institution is the faculty of instruction. The teacher is the most potent factor in making college work successful. Therefore, vigorous attempts have been made to raise the scholarship and general efficiency of the Faculty. It was found at the outset that from the earliest years a lack of permanency in the personnel of the Faculty had characterized the Institution. Since 1890, when the College first opened its doors to students there have been employed 85 professors, 70 instructors and 23 assistants. The average annual number employed during that time has been 16 professors, 12 instructors and 4 assistants. This shows that there has been a complete renewal of the Faculty about every three and a half years since the opening of the College. The present Faculty numbers 60. Of these 33 have been in the service less than three years; 15 less than five years; 4 less than seven years; 3 less than nine years and five have seen over ten years of service with the Institution. Under such conditions it is not possible to receive full value for the money expended for Faculty purposes. A properly trained instructor becomes more valuable every year

that he serves the College; his power with the Student Body is increased; his conception of the College policy is extended, and his general serviceableness is increased.

The most active cause of these faculty changes were traced to the fact that the leading positions have been filled largely by men whose interests were not permanently in Western men. the West, and who, therefore, accepted the first favorable opportunity to return to their family and business interests in some other section of the country. Naturally, the former scarcity of well-trained Western men was chiefly responsible for this condition. The experience of the College shows clearly that a Western educational institution, which of necessity can not offer the inducements held out by the larger colleges, must depend for permanency in its faculty upon men and women whose interests are in the West.

However, a number of properly qualified Western men have left the service of the College to accept better positions elsewhere. Many of those who have come from Low asalaries the East would have remained, had the opportunity cause changes. tunities here been sufficient. Other institutions of learning and numerous business enterprises are holding out inducements in the form of higher salaries to many of our men. During the last year two of our very best men resigned to accept private positions of the kind mentioned. In fact, the second chief cause of lack of Faculty permanency can be ascribed safely to the low salaries paid at the Agricultural College. It will be necessary in the immediate future to increase the salaries sufficiently to retain the good men in competition with other institutions.

Moreover, the faithful teacher's work is of such a nature that he can not mingle largely in the practical affairs of life, and he must depend almost wholly upon his salary for protection against sickness and old age. In view of this and the long preparation required for proficiency, the existing salaries are inexcusably low.

During the past biennium efforts have been made to increase the permanency of the Faculty personnel, and also to increase the standard of efficiency. A number of The efforts promising Western men, college graduates and to increase in sympathy with the work of the College, strength and serving in lesser positions on the Faculty, have been permanency. given leaves of absence and are now studying in various advanced institutions of the country

to prepare themselves to fill the responsible positions on the Faculty as vacancies may occur. These men are so distributed among the large universities that when they return the views and methods of the largest number of the best institutions may be represented in the deliberations of the Faculty. As these men return to their work, thoroughly trained in modern methods, material strength will be added to the work of the College. Moreover, this policy will soon insure a greater degree of Faculty permanency than has hitherto been known in the College.

To overcome the second cause of Faculty changes the State must be willing to provide a liberal appropriation for salary purposes. Under the conditions of the past, the Utah Agricultural College has been a training school for professors for many Western and some Eastern schools. The best men have gone away. Such a procedure, from the State's point of view, is suicidal. If the policy of encouraging Western men to prepare for the better positions, and of increasing properly the salaries of the competent men be continued for some years, the Faculty of the Agricultural College will soon be second to none in scholarship and stability.

The success of the Institution, the last two years, is due chiefly to the earnest, faithful work of the members of the Faculty. Each individual has done his duty so loyally well that practically there has been no need of disciplinary action. The instruction given has been modern and in full accord with the policy of the Institution. Though the last State appropriation was exceedingly low and expenditures had to be curtailed accordingly, there have been no complaints. On the contrary, every man has done his very best to show that the College will do its best under any conditions that may be imposed. There is nothing but praise to speak for the members of the Faculty of the Agricultural College of Utah. No finer or more loyal body of men and women can be found.

The change in administration; the removal of engineering from the College, and various other causes caused a number of changes in the Faculty at the close of the school year 1906-07. A few men of unusual value to the Institution felt impelled to resign, but all in all, the changes made the work of reorganization in the new field more easy of accomplishment. Numerical-

ly the Faculty has been maintained as before; departmental re-distributions have been those only that were necessitated by the partial change in policy. In the appendix will be found the resignations and appointments of the biennium.

Few new additions to the Faculty have been made. The increased work in agriculture necessitated the employment of an assistant professor of botany and for the winter months, instructors in forestry. Student assistance in domestic science was found somewhat unsatisfactory, owing to the interference with the regular class work of the students. The workers in that department, therefore, have been placed on full time and a maid employed to do the work formerly done by the assistants. Some additions have been made to the instructional force in carpentry and some diminution in the force in the forge rooms.

In all the new appointments, whether to fill vacancies or to undertake new work, the greatest care has been exercised in choosing individuals fitted by training and temperament for the special work of the College. In point of scholarship, there has been a distinct improvement. The Faculty has never worked together more harmoniously than at the present time. To take the place of the Faculty members who are now absent carrying on advanced studies, several men have been employed under temporary contracts who will retire when our own men return.

THE STUDENT BODY.

It was feared that the consolidation fight, the change in the administration and the passage of the law requiring a \$25.00 fee from all students outside of Utah, as against \$5.00 from Utah students would reduce the attendance considerably. A vigorous advertising campaign was conducted, however, with the result that the attendance of the previous year was not only maintained, but was considerably increased. In fact, the year 1907-08 showed the largest registration of students in the history of the Institution. At the present writing, the attendance for this season of the year is larger than that of the corresponding period of last year, which indicates that the total attendance of this year will exceed the total attendance of last year. (For detailed tables see the Registrar's Report in the appendix.)

In some respects this is the most encouraging feature of the work of the biennium, for it indicates that the people have confidence in the Institution and believe in the kind of education that it offers. The increase in attendance is especially remarkable in view of the fact that owing to the increased admission fee the attendance from other states than from Utah fell from 153 in 1906-07, to 45 in 1907-08, and 18 up to date this year. The loss of non-resident students has been more than made up by Utah. In fact, a study of the Registrar's reports as appended will show that the Agricultural College of Utah at the present time more than at any other time in its history, is a Utah school. Students from nearly every county in the State are receiving instruction in the industrial work of the College.

While the increase in total attendance is exceedingly gratifying it is not by any means the most important feature of the registration. If the Agricultural College is to fulfill its mission it must move towards a larger enrollment of students of college grade.

The college graduates will be the centers of industrial inspiration and enthusiasm for future students. For many years it will undoubtedly be necessary to maintain in connection with the Agricultural College an industrial high school department, yet the College must, if its permanency is to be insured, become more and more a college in the grade of its students. In this matter there has been very rapid progress. As indicated in the subjoined table, in the year 1906-07 there were 147 college students; in 1907-08, 172, and this year at the present writing there are 219. This shows an increase during the biennium of over 35 per cent. above the number of college students who attended two years ago. As far as the future of the Institution is concerned, this is the best report that can be made.

The graduating classes, likewise, are increasing in number. Last year the number was about the same as that of the preceding year. This year over twenty applicants have been accepted as candidates for graduation with degrees at the close of the school year. This will be the largest number ever graduated with degrees in any one year from the College. The College is rapidly moving towards a college standard.

At the opening of the school year 1907-08, the students were organized into an association known as the Student Body organization. All student activities were later placed under the control of this body. This was done to give the students experience in self-government, typical of our republic, and to encourage greater solidarity of student efforts. While the experiment in general was very successful, it did not possess the power to control the numerous—often too numerous—social and other affairs offered throughout the year by the many clubs and societies of the College. Neither could it control the practice of the organizations of the College to raise funds by giving dances or other forms of entertainment. These demands made a considerable drain upon the time and purses of the students and occasionally resulted in a half-hearted support of the more important College events. To improve these conditions by reducing the cost and controlling the amount and quality of the entertainments, and to make it possible for all students to attend all the College functions, the Student Body, at the close of last year, adopted a plan which was approved by the faculty and the Board of Trustees. In harmony with the plan, from the beginning of the school year, 1908-09, an annual Student Body fee of \$5.00 has been collected from all students. These fees constitute the Student Body fund which is expended to furnish proper amusement and entertainments for the whole Student Body. In return for the fee each student has received a ticket entitling him to free admission to all the regular functions of the Institution and to one year's subscription to the weekly newspaper and quarterly magazine, Student Life. Arrangements are made whereby students who can not pay this fee may work it out. Thus all the students of the College are placed on an equal basis. A committee composed of four students appointed by the Student Body, and three members of the Faculty appointed by the President, were placed in charge of this fund.

The plan has proved very successful. At this writing, the year is scarcely one-third over, yet games and other entertainments already provided, together with the subscription to Student Life, would cost, if they had been paid for in the usual way, more than half of the Student Body fee. The plan enables

Student Body
Organization.

Student Body
Fee.

Control of
amusements.

the Institution to furnish amusement to its students at the least possible cost; to control the number and quality of entertainments and to permit the Student Body as a whole to witness or take part in all the College events. The most striking result of the inauguration of this experiment has been to unify the Student Body more strongly than ever. This has reacted favorably upon every phase of work of the College. It appears that this experiment, the first of its kind undertaken in the State, will mark an onward step in the administration of the affairs of the Agricultural College.

"Student Life," the student publication of the Institution, since its founding has been a monthly paper. The news which appeared in it was always somewhat stale and "Student Life." the only really attractive thing about it was the fact that it chronicled in a permanent form the history of the Institution. In order to make the paper a more vital force in the life of the students, and to extend its influence for good, it was changed at the beginning of this year to a weekly newspaper with a quarterly magazine section. The weekly section, which appears every Friday morning, contains the week's College news, timely editorials, notices, requests and miscellaneous information about the work of the College. The magazine section furnishes an outlet for the literary activities of students, and is also made a permanent history of the more important events of the school year. In the course of time these magazine sections will undoubtedly be formed into a literary magazine. All in all, these changes have made the paper more useful in carrying on the work of the College.

The students as a body, owing very largely to the increased number of college students, are more mature and more earnest than in the past. As in past years, the Quality. Student Body of the Agricultural College is characterized by remarkable loyalty to the College and to all its interests. This spirit which must be fostered in any successful institution, if properly directed, will do much to develop the highest form of citizenship. Good order and a willingness to obey prevail among the students. Strict morality within and without the College campus is insisted upon. There has been surprisingly little need during the biennium for applying severe disciplinary measures to any students. Much of the improvement of the students may safely be ascribed to the opportunity of guided self-government which has been

given the students of the Institution. The Student Body of the Agricultural College may well be a source of pride to the State.

DIVISIONS OF THE COLLEGE WORK.

For the purpose of more efficient administration, the work of the College is grouped under seven great divisions:

1. The School of Agriculture.
2. The School of Domestic Science.
3. The School of Commerce.
4. The School of Mechanic Arts.
5. The School of General Science.
6. The Agricultural Experiment Station.
7. The College Extension Department.

THE SCHOOL OF AGRICULTURE.

The removal of engineering from the College and the greater demands of the State for agricultural assistance have necessitated, during the biennium, a reconstruction and extension of the agricultural courses.

Since 1890, one college course in agriculture had been offered. Several years ago this course was so reconstructed as to make it possible in the last two years to elect several subjects from some special branch of agriculture. With the new agricultural development in the State, the demand has increased for men who are trained in horticulture, agronomy, animal husbandry, or some other special branch of agriculture. At the opening of the school year 1907-08, therefore, the old college course in agriculture was broken up into several distinct courses. The first two years are alike for all agricultural students, but the last two years are prescribed according to the special pursuit desired. Regular college courses are now offered in agronomy, animal husbandry and dairying, horticulture and entomology and irrigation and drainage. This departure seems to meet the needs of the students and the State and has made it possible to give better emphasis to the agricultural work.

Recently a demand has arisen for systematic instruction in veterinary science. A certain amount of veterinary science

Veterinary Science. must be given in the general agricultural courses and many men are looking forward to it as a life's profession. In response to this demand the first two years of a college course in veterinary science have been outlined, and a large number of students have already enrolled in it. Some of these men will finish the second year this school year and the remaining two years should be added next year. That there is an opportunity in this State for a good school of veterinary science is beyond question. There are opportunities in every county and the State and the Government Service for first class veterinarians. The School of Veterinary Science would bear the same relationship to the general work of the Agricultural College that the medical school would bear to the other work of our State University.

Forestry. The recent growth of sentiment in behalf of forest conservation and the establishment of the Forest Service have resulted in a great demand for men trained in technical forestry. The officials of the Forest Service complain that there is a great scarcity of well trained men who are familiar with Western forest conditions. Even in the higher ranks the Service is obliged to employ men with little or no technical training. In conformity with suggestions received from the Forest Service officials, a short course in forestry, preparatory for the Civil Service, was given during the school year 1907-08. Most of the technical instruction in forestry was given free of charge to the Institution by members of the Forest Service. The course was extremely successful. Forty-nine students enrolled, most of whom continued throughout the three months' course of instruction. Immediately afterwards, a large number of students asked that a regular college course in forestry be established for the benefit of those who wish to make forestry a life's work. In harmony with these requests and the trend of public sentiment in behalf of forestry, a college course in forestry has been established. The first two years are now being offered. If this action meets the approval of the State Legislature the course will be extended next year to the regular four years. A large number of students are already registered in the course, who, if the course be not extended, will be obliged to seek further instruction elsewhere. While the present demand for educated foresters comes almost wholly from the Government, yet the de-

mand is so large that for some time to come the outlook for the various schools of forestry throughout the country is very promising. This is especially true of the West.

The short course in agriculture has also been strengthened. This is a course of three years, which enters students who have finished the common schools. It has been arranged to meet the special needs of the young men who can spend only two or three years in high school work before settling permanently on the farm. This course is receiving a great deal of attention from the people. In many cases those who take the short course continue their work in the college department.

Most of the extension work, as elsewhere reported, has been done by the agricultural faculty. Traveling over the State, usually at the most unpleasant seasons of the year, has meant considerable sacrifice on the part of the extension workers, but the work has been gladly and as far as we can judge, most effectively done.

The local high schools which are springing up over the State, are holding more and more of the young people during the high school period. Only a few of these high schools have introduced agriculture, domestic science and other industrial subjects in their courses of study. The College, therefore, has arranged its courses of instruction so that graduates of the high schools may enter the college courses without any loss of time. This has involved considerable shifting of college subjects, but has been found to be possible. A number of graduates of the high schools of this and other states are now pursuing special agricultural studies at the College and will be able to obtain their degrees without any loss of time.

The comparatively small appropriation made by the last Legislature made it impossible to provide any substantial additions to the Faculty, though the increase in students made the burdens of the teachers very heavy. However, in addition to maintaining the agricultural faculty an assistant professor of botany has been employed to give assistance in the work in horticulture. Some assistants have also been employed in the various departments to meet pressing needs. In order to meet the agricultural requirements of the College it will be neces-

sary, if the present attendance continues, to employ another man in veterinary science and a professor of forestry and, perhaps, two assistants in other departments of agriculture.

The veterinarian receives numerous calls from all parts of the State to assist in overcoming the frequent outbreaks of live stock diseases. Since there is no State veterinarian, the College has felt justified in giving such help, but when the veterinarian is away his classes suffer, which is unjust to the students. Moreover, such work involves considerable expense to the College which is not provided for by the Legislature. A simple solution of the matter is to create the office of State Veterinarian who shall be the professor of veterinary science at the Agricultural College, and to pay one-half of his salary and receive one-half of his time for inspection and other purposes throughout the State. The College could then pay the other half of his salary for purposes of teaching. By this means the College would be able to employ another man whose full time could be given to work of instruction.

The attendance of the School of Agriculture has grown very rapidly during the last two years. The total number of college students in agriculture in 1906-07 was 31; in 1907-08, 72, and at the present writing this year it is 91. The total number of agricultural students in 1906-07 was 118; in 1907-08, 233, and at the present writing there is a total of 201, which indicates, if the winter course corresponds to that of last year, that there will be a registration in agriculture this year of over 300 students. Many of the students have entered the different classes in agriculture from other advanced schools and a few students have registered from foreign countries. This growth in attendance indicates clearly that agricultural instruction is being desired more and more by the people of Utah and that the College must shape its policy to conform with this growing demand. With respect to attendance the prospects of the School of Agriculture are among the very best.

At the present writing 10 students have been accepted for graduation with degrees in agriculture this school year.

The total number of graduates in agriculture before this year is 15. This shows strikingly well the manner in which agricultural education is growing within the State.

The reduced appropriation likewise has made it impossible

to make any extensive additions to the equipment of the School of Agriculture. The rooms occupied by the agricultural workers have been rearranged. A number of classes that formerly met in the basement of the main building have been moved to the first floor. A soil physics' laboratory has been equipped on the first floor; and a laboratory for elementary agriculture in the former agricultural museum. The Experiment Station has purchased a team of pure bred Percheron mares, which are available for instructional purposes. Some other horses and a few cattle and sheep and hogs have also been purchased as occasion absolutely demanded. Illustrative material has been provided in small amounts, but not in any manner commensurate with the development of agriculture as a science and with the increase in students studying the subject. In fact, special equipment for teaching agriculture in the Agricultural College of Utah is extremely limited. Large additions must be made if the College is to keep pace with modern agricultural progress and meet the needs of its students.

If the School of Agriculture is to do good work it must be given more room. The School is now huddled together in a few poorly equipped rooms. The present floor space should be at least doubled in order to accommodate properly the students and equipment of the agricultural departments. Much new apparatus is needed for the study of soils, water, plants, insects, machinery, etc., etc. As this is procured more room will be required. The live stock of the Institution must be overhauled. The recent policy has been to eliminate all grade stock and to buy for permanent use only pure bred registered animals. Students in agriculture must be given the opportunity of becoming acquainted first hand with the different types and breeds of horses, cattle, sheep, hogs and poultry. A large number of each breed is not needed, but a few typical specimens should be maintained by the College for the benefit of the students.

The work in animal husbandry and stock judging has become very popular. However, the climate of Logan is such that it is practically impossible to take classes out to the barns to judge stock during the winter months. The cold, rain and snow make it impossible to give or receive good instruction.

One of the main needs of this department, therefore, is a small stock judging pavilion into which live stock of any kind may be brought and students properly seated to observe the characteristics of the animal. The cost of such a pavilion will be comparatively small and once constructed it should suffice for the needs of the College for a number of years.

The department of veterinary science has also grown very rapidly during the last two years. The old fruit cellar under the veterinary hospital has been fitted up for a dissecting room, thus doubling the floor space formerly used by the department. Even with this addition the department is crowded beyond the possibility of doing good work. It will be necessary, if the work is to be continued, to build an addition to the present veterinary hospital for purposes of dissection and treatment. Free clinics are held at the College every week. On some days as high as thirty-five to forty diseased or injured animals are brought to be examined and treated by the students. During the long, cold and wet winter months this work for which the College has no shelter becomes very unpleasant and in many cases it is dangerous to the health of the students. The request is therefore made that the addition to the veterinary hospital be so built that a shed be included where the regular weekly clinics can be held.

It is only a matter of a very short time until the State must provide its Agricultural College with a special building for instruction in agriculture. The general fundamental subjects connected with agricultural training are expanding, and will soon require the use of the whole of the present main building. For next year, the possibility of doing effective work in agriculture in the main building is possible only if the request to move the domestic science department into the dormitory be complied with. If the present rate of increase in attendance continues during another two years, an agricultural building will probably be indispensable at the end of the coming biennium. The State of Utah, which is so important agriculturally, can not afford to house its School of Agriculture in overcrowded or unsuitable quarters.

In general, it may be said that the School of Agriculture of the Agricultural College has shown a vigorous, though

The excellent progress in agriculture. normal growth during the last two years. The great agricultural awakening of the whole country is felt strongly in our State. As far as our statistics show, Utah at the present time leads the Western states in its demands for agricultural instruction. This means that, shortly, modern methods of agriculture will be applied to Utah farms, which, in turn implies that the possibilities for happiness and financial results on the farm will increase. The excellent agricultural opportunities offered by Utah give assurance that there need be no fear that agriculture as a profession is being over emphasized. On the contrary, the strength of Utah will depend very largely upon the development of this kind of education among the agricultural classes. The growth of the School of Agriculture has been a source of joy to all the members of the Faculty and especially to those who are directly interested in the progress of agricultural education throughout the State.

THE SCHOOL OF DOMESTIC SCIENCE.

In educating men for their life careers, the equivalent education of women is frequently overlooked. If women possess an intelligent mastery of their main profession—home making—and have some intelligent appreciation of their husbands' work, the probabilities are in favor of the establishment of harmonious and progressive households. In the interest of the State, the education of women is no less important than that of the men. Not only must women be educated for home making, and all that pertains to this important phase of life, but our present civilization requires many women to make their living by labor outside of the home.

The School of Domestic Science has in mind this two-fold purpose. First, it aims to train women to be homemakers who understand the principles involved in the work of the house—the cooking of foods, the sanitation and ventilation of the home, the rearing and care of children, the adornment of house and person, and so on; secondly, to enable women to learn something of domestic science, and at the same time to acquire skill in some profession by which women may earn their living directly. The School of Domestic Science is thus

very comprehensive in its purpose and it uses every legitimate effort to dignify women's work.

In harmony with this policy, the courses of instruction have been somewhat modified and modernized. The college course of four years has been made to include each year, a larger amount of strictly domestic science work, and the required scientific and miscellaneous subjects have been chosen more definitely with respect to the special needs of home science. The manual training course of three years, which admits graduates of the eighth grade, has also been rearranged and strengthened, on the basis of the plan of the college course. Cooking has been brought down to the first year so that students entering the course may obtain a taste at once of some of the special work which characterizes the course.

In addition to the work in the college and high school classes a large amount of Farmers' Institute work has been done. (See section on Extension Work.) Regular schools of domestic science of one week's duration were held in connection with similar schools of agriculture. The women of the State took very kindly to the instruction and in the majority of the towns in which the schools were held, the women's sections were crowded.

The School of Domestic Science has been in charge of an acting director during the last two years. An assistant professor has been in charge of the work in domestic arts—sewing and related work. An instructor has been in charge of the practical work in the kitchens; two assistants have devoted their time to domestic arts, and a maid has kept the rooms and equipment clean and in order. The student assistants, owing to the interference of the work with their studies, have been dispensed with and in place of them the maid above mentioned has been employed. This faculty has not been sufficient to meet the requirements of the School. It will be necessary to employ at least one additional professor in order to accomplish the work demanded by the increased attendance.

The distance of the College from many of the boarding places in town makes it very desirable that some provision be

Need of daily hot luncheon. made for serving a cheap luncheon to our students. At a number of schools in the State this is now done with very great advantage to the students. It saves a certain amount of time, and more important than that, it contributes to the general health of the students by furnishing a warm meal in the middle of the day in place of a cold luncheon. To do this satisfactorily an instructor must be employed to supervise the work, who can spend her spare time in giving general assistance in the department.

Attendance. There has been a distinct growth in the attendance of the School of Domestic Science. In 1906-07 there was a total of 97 students regularly registered in domestic science; in 1907-08 there were 93, and in 1908-09, up to the present writing, 120. A notable feature of attendance is that the number of college students in domestic science this year is already more than twice as large as the number last year. With an added instructional force and a new and modern equipment the attendance in domestic science would increase rapidly, since there is a general awakening in behalf of women's work.

Need of room and new equipment. The equipment of the School of Domestic Science is unworthy of the Agricultural College. The rooms devoted to domestic science proper—kitchens and dining room—are located in the basement in rooms that can not by any device be made home-like and cheerful. The domestic arts department is somewhat better located, but in that department also, the rooms are not well suited to the work. The equipment is meager and generally old-fashioned. The department was located as it now is, fifteen years ago, and few material additions have been made to it during that time. At one time the School of Domestic Science of the Agricultural College of Utah with respect to its equipment was said to be the best in the Western country. It is with regret that it must be confessed that we have no longer any claim to such a title. Modern equipment, better quarters and a strengthened Faculty are necessary to regain our past standing and to place the department on a useful and popular footing. The laboratory equipment for cooking, sewing, home sanitation and other features needs to be overhauled and increased. The old and worn out equipment

Conditions of progress.

can well be disposed of and replaced with modern and up-to-date devices. Dishes, glass ware, silver ware, table cloths and other necessities of the kitchen and dining room should be provided of such quality and in sufficient abundance to make the School, indeed, a training place for the highest and best in woman's life. The College, to do well its work for women, must be a place where the highest ideals of home making are held continually before the students. Upon these ideals the coming home makers of the State will base much of their own work. In a measure the homes of the students trained in this department will reflect the beauty, convenience and joy that may characterize the kitchens and laboratories of the School of Domestic Science of the College.

Next to teachers and equipment the chief necessity is more and better room. In the main building more room for women's work can not be found. After considerable investigation and discussion it has been decided that the present dormitory can be converted into a satisfactory women's building. The dormitory, built in 1890, is a substantial brick building of four floors, which at the present prices could not, probably, be duplicated for less than \$40,000.00. It has been used as a dormitory with little success. The average yearly number of students in the dormitory has seldom exceeded 40. The cost of board has not been very much, if any, lower than at any of the regular boarding places throughout the city. Moreover, the dormitory has always been a source of annoyance because of the difficulties which are necessarily encountered wherever a large number of students live under one roof. The annual cost of maintenance has been over 1,000.00 per year. At present the building is in a dilapidated condition, not to be compared with the ordinary homes throughout the city. If the building is to be maintained as a dormitory it will be necessary for the State to invest at least \$15,000.00 to remodel the building on modern plans and in conformity with the demands made by students today. It seems scarcely right to spend that much money for the maintenance of forty students who might find good accommodations within easy reach of the College. For some reason, somewhat difficult to understand, it has been very difficult to induce our women students to live in the dormitory. There

exists no really good reason why the College should maintain a dormitory.

On the other hand, under the crowded conditions of the College, the dormitory could be made to serve a very useful purpose as a woman's building in which all the work of the domestic science department could be housed. In the basement could be placed the laundry and store rooms; on the first floor, the offices and lecture rooms; on the second floor, the rooms for sewing, millinery, dress making, etc.; on the third floor, the kitchens and dining rooms, and on the fourth floor, rooms for drawing and other necessary purposes. The building properly remodeled and equipped would be one of the best buildings devoted to woman's work in the West. The change, should it be made, would greatly dignify woman's work and the effect of the change would be felt throughout the State.

An architect employed to examine the building estimates that \$12,000.00 would remodel the building and place it in good condition for the purposes of the School of Domestic Science. Five thousand dollars more would equip it sufficiently for our needs for the next two years. Thus, with the expenditure of \$17,000.00 the State might secure for instructional purposes a building that at the present time could not be duplicated for less than \$55,000.00 or \$60,000.00. In behalf of woman's work in the State it is very desirable that the change be made. Should it be made, the School of Domestic Science would probably be housed well for eight or ten years. Additions could be made as occasion requires. The rooms vacated in the main building could be used advantageously by the departments of agriculture, which, as has already been pointed out, are in need of more room. It is sincerely hoped that this proposed change may be authorized.

There is a great awakening in systematic women's work throughout the State and this Institution as the only advanced school in the State that under the present laws can give advanced work in domestic science should keep abreast of the times and do work fully equal in all respects to work done in similar institutions in behalf of women.

THE SCHOOL OF COMMERCE.

The School of Commerce of the Agricultural College of Utah is more than a business college in which bookkeepers, stenographers and typewriters are trained. True, in the high school years, training in accounting, stenography and typewriting is given, but these subjects are not in any sense the main feature of instruction in this School.

The work of the School of Commerce concerns itself more vitally with the development of the natural resources of the State. The great economic principles underlying commerce, the conversion of the raw materials into manufactured ones, the mechanism of the exchange of commodities, the possible commercial development of the State, the proper care and proper disposal of the products of the State and other great questions of similar nature are discussed. Upon the discussion and solution of such problems hinges the development of the State just as firmly as upon the development of agriculture, or mining, or mechanic arts. From this point of view the School of Commerce of the Agricultural College is essentially a school of political economy, sociology, civil government and kindred subjects. It aims to train men who may in a humbler or great capacity be captains of industry, and who shall understand thoroughly the fundamental principles which of necessity underlie successful business administration.

That such instruction should be given in a college which is devoted strictly to industrial work is eminently evident. The existence of the School of Commerce in the Agricultural College strengthens materially the work in agriculture, domestic science and mechanic arts; and in return, these departments of instruction strengthen the work in commerce.

The School of Commerce is essentially a practical school in which fundamental principles are considered as they find practical application in the life and development of the State.

In order to accomplish these purposes the School of Commerce offers a high school course in commerce which, essentially, resembles the ordinary business college courses; but followed by a college course of four years leading to a degree, in which economics and related subjects of college grade are taught.

During the past biennium the faculty of the School of Commerce has undergone a thorough reorganization. The former head of the department resigned at the Faculty. close of the school year 1907-08, to accept a similar position elsewhere. In his place was chosen Dr. George Thomas, a trained student of economics, who has received his education in the best schools of this country and of Europe. To assist him, men were employed who have themselves received a college education and are specialists in business administration. The result has been that the School of Commerce has taken upon itself new life and activity.

The attendance was slowly falling until the reorganization took place. This year, at the present writing, the attendance has maintained itself, and the college students have increased largely. In fact, as nearly Attendance. as can be estimated, the number of students of college grade taking economics in the Agricultural College is nearly equal to the total number taking the same subject in all the other schools of the State. Not only are the students who regularly belong to the School of Commerce registered for work in economics, but all students of agriculture and domestic science are required to do a certain amount of this work. The effect of this training in connection with the other practical training of the Institution will in the course of a short time have a marked effect upon the development of the State.

The equipment of the School of Commerce is fairly good. The department is somewhat crowded for room and some new equipment will have to be purchased from year Equipment. to year. However, in most respects it is one of the cheapest departments to maintain. The main Needs. expense in connection with it is the item of salaries. To meet the growth of this School it will be necessary to employ for the coming school year another assistant professor.

It may be noted that college courses in commerce such as are given by the College are now being given in many of the leading colleges of the country.

THE SCHOOL OF MECHANIC ARTS.

The School of Mechanic Arts was created by an act of the State Legislature approved in 1888. Since that time it has

History and work. been a permanent part of the work of the College. During the major portion of its existence it was somewhat of an appendage to the School of Engineering. Upon the removal of engineering from the Institution, a reorganization of the aims and purposes of the School became necessary. The matter has been considered carefully with reference to the needs of the State. There is at present a dearth of skilled artisans in the State. Most of those who are practicing in the State have come from the older countries and the Eastern states, and as these men grow older, unskilled or poorly trained men take their places. The effect of the lack of high grade artisans is beginning to be felt in many branches of the activities of the State. Moreover, a growing state like Utah requires more, not fewer, artisans.

Purpose. It would seem that the prime purpose of the School of Mechanic Arts, in view of the needs of the State, should be to teach a variety of trades in a modern way and in the light of recent discoveries and applications of science, and thus help supply the State with skilled and intelligent artisans. The State maintains no other school where such teaching can be given. A secondary, though important purpose should be to give to students of agriculture, commerce, or other subjects an elementary acquaintance with tools and their uses, in order to qualify them more thoroughly for practical life.

During the biennium, the work done in the School of Mechanic Arts has been very largely a continuation of past work.

Work accomplished. Carpentry, forging, carriage building and machine work have been taught to large numbers of students. The products of the School have been seen by thousands of citizens at the recent State Fairs. Carriage building was added, definitely, during the biennium, and work in horse shoeing is under way. Wood carving has also been added as an incidental phase of the work.

Some changes in faculty and courses have been made, but none of material importance. The period has been one of careful thought with the view of carrying out the reorganization after the Legislature has expressed its will in the appropriation for the maintenance of the College. The plan now

Plan of reorganization. is to erect upon the present foundation a first class school of trades. Of first importance will be a faculty who can adapt their training to the

interests of the State, and who are thorough converts to the idea that a trade, if practiced by a man properly educated, may be made as attractive as many of the older "professions." Then it is proposed to establish one trade after the other as rapidly as the demand increases and the funds of the State permit. A number of trades are already asking for admission to the School of Mechanic Arts.

In addition to the general maintenance, the two great needs of the School of Mechanic Arts are the employment of a first class director of mechanic arts, and a building in which horse shoeing may be done.

The word "trade" does not carry with it the dignity that it has the right to claim. Perhaps this very fact is the best indication of the necessity of possessing within the Trade schools. State a first class institution where trades can not only be taught, but in a measure dignified by the application of intelligence. In harmony with the basic policy of the Institution as stated at the beginning of this report, the College would be proud to maintain a modern trade school, the purpose of which should be to train mechanics in both mental and manual skill.

Unquestionably, the time is near when mechanic arts in all its branches, under the application of modern science, will take its place in dignity and possibility by the side of the other departments of instruction ordinarily maintained in schools of applied science.

THE SCHOOL OF GENERAL SCIENCE.

There are always some students who do not desire to follow any of the regularly arranged courses of instruction offered by the College. These students prefer to pick and choose from the subjects offered. Such students constitute the School of General Science. No special classes of any kind are organized for such students. The classes to which they are assigned are in every case those regularly given in the regular courses of instruction. However, there can be no valid reason for refusing such students instruction. For the purpose of more efficient administration the School of General Science is maintained. Since it uses only the work of other departments it has no special request to make of the State.

THE EXPERIMENT STATION.

The resignation of the former Director of the Experiment Station led to some revision of the experimental work of the College. Some experiments which had been carried on for several years in the past needed overhauling with the view of reorganizing them on the basis of the discovered facts. This work is now in progress and will be found discussed in the appended report of the Director.

In addition to the Government appropriation, the Station receives assistance from the State for special investigations.

State experimental work.	The experimental arid farms, which have done so much for the upbuilding of the State, are supported wholly by the State. The irrigation investigations which are fundamental in their nature and which should be continued for some years to come are supported jointly by the State and the Federal Government. The State Central Station, located at Lehi, and the State Southern Station, located at St. George, are both doing effective work. As noted in the Director's report, trees have been planted and other experiments started at the Central Station. It will be some years before results can be obtained. The Southern Station, on the other hand, has now passed its preliminary period, and is approaching the time when it will be of active service to the residents of southern Utah.
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First need.	The most important assistance that can be given the Experiment Station at the present is the opportunity of publishing the results that have been accumulated for some years past. Discoveries of very high importance to Utah agriculture are lying on the books of the Experiment Station, but can not be published for lack of funds. It is not sufficient to discover new truths, they must be prepared, published and distributed among the farmers of the State. The irrigation and drainage
Irrigation and drainage.	investigations which have been conducted for the past eight years have yielded results of far-reaching importance. Six or eight bulletins dealing with these results alone should be published. The conclusions obtained by these investigations regarding the right use of water and the conservation of water in the soil will, if applied to the farms of the State, cause an increase in crops

that will pay back very soon all the money that the State has put into the investigations or that may be put into them for some years to come. The same may be said of a number of other investigations conducted by the Station, which also have not been published owing to lack of funds. Information is needed from the Utah point of view concerning many agricultural problems. For instance, though lucern

Lucern. is one of the main crops of the State, there is not in existence any book or booklet which brings together in a comprehensive and simple form all the vital facts connected with the seeding, raising, harvesting and feeding of lucern. Inquiries are continually coming in, not only from the old residents of the State, but from the new settlers who take up land and who are anxious to get all the information possible concerning the peculiar problems of the State. A bulletin on alfalfa should be prepared and distributed among the farmers of the State. The same can be said about irrigation. A popular bulletin embodying all the results applicable to the conditions peculiar to our State

Other reports. should be prepared and distributed. Similar reports on cattle feeding, sugar beet growing, etc., etc., are demanded. The State could probably render no greater service to the Experiment Station or to the farmers at large than to appropriate a sum sufficient to publish during the next two years a series of these reports. If, say, \$1,500.00 a year could be set aside by the State for this purpose it would be sufficient to get the work under way.

The Experiment Station is and always has been a vital factor in the upbuilding of Utah agriculture. It works quietly and patiently and the members of its staff receive very little honor, but its methods and results are revolutionizing agriculture in this State. Under its present management its work is being well and comprehensively done.

AGRICULTURAL EXTENSION WORK.

The demands made upon the College by the people of the State for extension work have been far beyond the means of the Institution. The sentiment is growing not only throughout Utah, but throughout the country that public institutions of learning, especially those dealing with the more practical prob-

Demand for the work.

lems of life, must go out among the people and give the results of their investigations to the older men and women who have not had the opportunity of attending college. Moreover, this kind of work is perhaps the best form of propaganda for the distinctive work of the Agricultural College. To come in direct contact with a community usually means the winning of converts to the work of the College.

The Farmers' Institute work of the State was authorized 12 years ago by the State Legislature. An appropriation of \$1,500.00 a year has been available since that

History. time for the purpose of disseminating new truths concerning agriculture among the people of the State. The development of the Farmers' Institute movement has been somewhat slow, but today it rests on well developed public sentiment. Last year, Schools of Agriculture and domestic science. the plan was tried of going into a community and remaining there for one week. Two meetings a day were held for the men and one for the women, and one joint session in the evening.

At the men's sessions problems relating to the special agricultural needs of the locality were discussed and in the women's section general problems relating to home keeping were investigated both by lectures and by experiments.

Attendance. During the year 1907-08 twenty-five traveling schools and institutes were held. These were attended by 26,926 men and women. The attendance was far beyond the liveliest anticipations of the workers. More requests for these schools were received than could possibly be honored.

This year numerous counties throughout the State are demanding that the school be held in them this year. To reach as many of the people as is possible, it is planned

Special train. for the year 1908-09 to run two special cars filled with agricultural and domestic science exhibits throughout the State and to hold meetings of one day's duration at all principal stations. These cars have very generously been placed at our disposal by the railroads of the State free of charge. Some farmers' schools will also be held. Whether special cars are better than the farmers' schools is to be demonstrated. The extension faculty are attempting to discover what method is best adapted for the needs of the State. One thing has been demonstrated, that the people of the State are ready for and now demand more extension work.

In addition to the above work thousands of letters asking for information have been answered. An annual
 Correspondence. report containing a summary of the results of
 Publications. the methods of reclaiming the arid lands without irrigation has been published, and another report on the possibilities of dairying in Utah is now ready for the press.

The \$1,500.00 allowed by the State for this work has, of course, been wholly insufficient to do the work demanded.

Nearly \$1,500.00 a year have been taken from the
 Needs. College treasury to supplement the work.

However, the demands of the people have been so insistent that this action has been thought justifiable. The State should make immediate provision for an increased appropriation to enable the extension work to be done effectively throughout the State. Our neighboring states are all appropriating large sums annually for this purpose. Montana uses every year \$7,500.00 for the purpose of conducting a vigorous farmers' institute campaign throughout the state. The extension work is co-ordinate with the work done in the College itself in bettering the agricultural and home conditions in the State and of teaching the people the best methods of developing the resources of the State.

In addition to the work done among the farmers, a member of the agricultural faculty has visited the State University nearly every Monday throughout the school
 Co-operation with State University. year and delivered lectures on elementary agriculture before the normal students of the State University. If the agriculture of the State is to be built up as it should be, a love for the soil and all that pertains to it must be instilled into the child at a very early age. For that reason, the teachers who graduate from the normal school should go out qualified with at least a partial understanding of the meaning of modern agriculture. The State Normal School should be permitted to employ a professor of agriculture to give definite agricultural instruction to the coming teachers. Such a man might have official relations with the Agricultural College which would keep him in touch with the larger work of agricultural experimentation and teaching.

IRRIGATION ENGINEERING.

According to articles 2087 and 2292 of the Compiled Laws of Utah of 1907, the Agricultural College is forbidden to offer courses in engineering and the University is forbidden to give any "instruction in irrigation as applied to the measurement, distribution and application of water for agricultural purposes." As a result of these laws, Utah, the pioneer irrigation state, cannot in any one of her educational institutions offer a consistent and complete modern course in irrigation engineering. This is an absurd condition, which certainly was not foreseen at the time the laws were enacted.

Neither University nor College can teach engineering.

To make it possible to offer a course in irrigation engineering within the State, the University of Utah and Agricultural College of Utah have jointly offered an irrigation engineering course. The College has taken the farmer's side of the work and the University the engineer's side. While the co-operation has been entirely friendly and harmonious, yet the result promises to be that the mother of modern irrigation in America will not turn out many irrigation engineers. Unless the laws be changed, the future irrigation engineer in Utah will in all probability be either an imported article, or, if Utah made, a civil, mining, or mechanical engineer; in fact, any kind of engineer except an irrigation engineer.

A joint course.

State pride alone should prevent this condition of affairs from continuing any longer. Moreover, the demand is growing in this State for men who are irrigation engineers in the modern sense of the words; men who have a fairly good acquaintance with the principles of engineering and agriculture in their relation to irrigation. The State needs, perhaps, not so many irrigation engineers to construct dams and canals as to maintain the canals and reservoirs already built and to act as supervisors of the canal systems that are in existence or may be built; that is, men who can stand between the farmer and the control of the canal. This involves a special training, which can not at the present time be obtained satisfactorily in any of the colleges of the land. Utah, which led in the establishment of the art of irrigation in modern days, should lead also in the formulation of a course in ir-

Demand for irrigation engineers.

rigation properly and especially adapted to the needs of an irrigated country.

It is very difficult, indeed, to induce an Agricultural College student who has graduated in irrigation and drainage, from the farmer's point of view, to take two more years at the University for the purpose of learning engineering. It would probably be even more useless to expect graduates of the School of Mines to spend two years at the Agricultural College to learn the relationship of agriculture to engineering. The laws should be modified so that the two great State schools may be permitted to teach irrigation engineering.

In fact, the reestablishment of a course in irrigation engineering at the Agricultural College would be a very beneficial addition to the present work of the College. It would involve comparatively small expense. The equipment over and above what is necessary for the teaching of irrigation from the farmer's point of view would be so small as to be scarcely worth considering. The only annual additional service would be that of a professor of engineering at an annual salary of \$2,000.00 to \$2,400.00. One man is already employed who teaches elementary surveying, and its related branches, such as the measurement and distribution of water.

By hedging the law about properly any future controversy between the two institutions as to engineering might well be avoided. In the Agricultural College the course would have a distinctly agricultural leaning, while in the University the engineering side would be emphasized. There would be ample room in the State for both classes of irrigation engineers. This change would strengthen materially, at least the work of the Agricultural College.

It is strongly to be hoped that the privilege of giving a course in irrigation engineering may be restored to the Agricultural College.

MISCELLANEOUS DEPARTMENTS.

To give adequate instruction in the Schools of Agriculture, Domestic Science, Commerce and Mechanic Arts, strong departments in English, mathematics, history, art, economics, sciences and other fundamental subjects must be maintained. The education of a modern worker must rest on a modern basis.

The College is not a trade school of the old kind, it is a professional school in which it is attempted to give common pursuits an intellectual and therefore a professional dignity. To accomplish this it is as necessary to teach the "why" as the "how" of the operations peculiar to any pursuit. This can be done only as the general education of the student permits. In fact, the value of the work of the College depends very largely upon the general departments.

The departments of instruction of the College are characterized by careful, modern methods. The classes are small, so that each student may receive personal attention. Every effort is made to enable the students to obtain full value for the time that they expend. The chief handicap during the biennium has been the limited amount of equipment, due to the reduced appropriation. The reports of the departmental heads, found in the appendix to this report, show specifically many of the needs of the different departments of instruction.

FINANCIAL CONDITION.

The appropriation of 1907 was smaller than any made for the maintenance of the Agricultural College since 1899. In 1901, 108,200.00 were appropriated; in 1903, \$110,975.00, and in 1905, \$140,500.00.

The College has been organized on the basis of past appropriations. It has, therefore, been very difficult with the appropriation last made to maintain the Institution as already organized and also to keep pace with the increased attendance and modern requirements. Since the Faculty is of first importance in an education institution, every effort has been made to maintain the entire teaching corps as in the past, with only such changes as the shift in policy necessitated. It has been impossible to afford proper teaching help for the new work which has been planned. The class rooms and ordinary facilities for successful teaching have been maintained, properly. Some books, a small supply of apparatus and live stock have been procured. Indispensable repairs have been made on the buildings and equipment. The campus has been well kept; several hundred trees planted out, and other miscellaneous improvements made.

However, the appropriation did not permit of any extensive improvements, such as the painting of the buildings, repairs and extension of the heating plant, and protection of

the building against wind and weather. Not only have there been no material additions to the equipment, but much of the old equipment has been worn out, and the work of students and teachers has thus been handicapped. All in all, while the College has been maintained on a first class basis, very little has been done in the way of permanent improvements or definite additions to the equipment. If the College is to hold its own with like institutions throughout the land, and if it is to meet the increased demands made upon it by the people of the State, it seems indispensable that the State make a more liberal allowance than was made at the last session of the Legislature. In fact, the necessary improvements on buildings and equipment will be much larger the coming biennium than they would have been if some money had been available for such purposes this biennium.

To maintain the College as it has been maintained with the money at its disposal has meant a willing co-operation on the part of the members of the Faculty and in many cases personal sacrifice in order to do effective work with the somewhat reduced equipment and supplies. The expenditures of the College have been kept carefully within the means available.

REQUIREMENTS AND INCOME.

The following estimate of requirements is based upon the belief that the Agricultural College is expected to continue its present lines of work; that there will be some increase in the number of students during the coming two years; that every year must witness some growth in the efficiency of the College, and that another appropriation, similar to the one last made, will necessitate considerable adjustment and contraction of the work of the Agricultural College.

The item for salaries and wages, in spite of the demand for more help as the student body has increased, is based upon the present pay roll. The amount requested for supplies is within a few hundred dollars of the expenditures for the same purpose the last two years. The amount requested for equipment will barely supply two-thirds of the actual needs of the College, as explained by the department heads. It should be remembered in connection with the item of equipment that the last appropriation made it impossible to replenish or add to the equipment, so that a double burden falls upon the coming biennium. The maintenance of the library which must grow

annually to be of real service, is included in the request for equipment. The item for livestock is less than half of the estimated requirements of the departments. An agricultural college should certainly possess representatives of the different types and breeds of domestic animals. The present policy of the College is to eliminate all grade animals, and leave only purebred, registered animals in the College barns. The item for repairs is larger than it would have been had the last appropriation permitted of proper repairs, but the property of the State must be kept in good condition. The necessary items of light, power, fuel, printing, insurance, etc., are all based upon the expenditures of the last two years, with the exception of the amount required for the printing and advertising, which is smaller than the amount actually expended during the biennium. The arguments for the new buildings have been stated elsewhere.

The income of the College, as stated below, will not be largely, if at all exceeded. It must be remembered, also, that the money given by Congress for the Experiment Station can not be used at all for instructional purposes.

ESTIMATED REQUIREMENTS AND INCOME OF THE AGRICULTURAL
COLLEGE OF UTAH FOR THE BIENNIUM JULY 1ST, 1909, TO
JUNE 30TH, 1911.

Requirements.	Salaries and wages, on the basis of 1907-08	\$140,000.00
Additions to the teaching force:		
Professor of Forestry, \$2,000 per year	4,000.00	
Professor of Veterinary Sci- ence, half time at \$1,000.00	2,000.00	
Two instructors at \$1,250.00 each per year	\$5,000.00—	\$11,000.00
Supplies on the basis of 1907-08, (in- cluding Mechanic Arts supplies, feed for live stock and supplies for all other departments)		20,000.00
Equipment (for all departments, in- cluding library, but not including live stock)		22,000.00
Live stock		15,000.00

Repairs :

Painting	4,000.00	
Steam heating	1,850.00	
Water works and sewerage...	750.00	
Hard finish and Calcimining..	1,000.00	
New floors and steps for stair- ways	2,200.00	
Cement walks	600.00	
Window glass and blinds.....	400.00	
Lighting system	400.00	
Fencing	500.00	
Miscellaneous	1,000.00—	\$12,700.00
Light and power		6,000.00
Fuel		7,500.00
Printing and advertising		4,000.00
Insurance		2,000.00
Postage, stationery, telephone, tele- graph		2,500.00
Total for maintenance.....		<u>\$242,700.00</u>

New Buildings:

Woman's Building

Remodeling dormitory..	15,000.00	
Equipment	5,000.00—	\$20,000.00
Veterinary hospital and shed for clinics		3,500.00
Stock judging pavilion		2,500.00
Incubator cellar		600.00
Total for new buildings.....		<u>26,600.00</u>

Total for maintenance and new
buildings \$269,300.00

Income :

Morrill fund (land grant of 1862)	\$ 15,000.00
Morrill fund of 1890	50,000.00
Nelson fund of 1907	35,000.00
Fees	10,000.00

Total income.....\$110,000.00

Total amount required from the Legislature for
maintenance and new buildings.....\$159,300.00

In addition, The Experiment Station asks for a
publication fund of..... 5,000.00

The biennium drawing to a close has witnessed vigorous demands for agricultural and industrial education in the State of Utah. The increased attendance at the College and the response to the farmers' institute movement, testify to this industrial awakening. Moreover, the finances of the College have been such, that the present management has had ample opportunity to discover how much may be accomplished with a reduced appropriation. The recommendations contained in this report have been carefully made in conformity with existing conditions and needs. Utah must live within her means; but she must so maintain her institutions that they may be of great use and an honor to the people. In its service to the State the Agricultural College occupies today an honored place among similar institutions of the land. To maintain this position, the Institution must grow as the State and the people grow.

Respectfully submitted,

JOHN A. WIDTSOE,
President.

Logan, Utah, December 15, 1908.

Departments of Instruction.

To the President of the College,

SIR: The School of Agriculture has made a greater increase in the past two years than in any previous period in its history, the total enrollment increasing from 78 at the end of the sixth week in 1906 to 188 at the same time in 1908, an increase of almost two and a half times. In the following table is shown a comparative analysis of the enrollment for the past three years.

Year	Total Students	Prep.	Coll.	1st yr.	2nd yr.	Fresh.	Soph	Junior	Senior	Special	Optional
1906 ..	78	46	*32	23	19	18	5	2	2	5	4
1907 ..	126	57	69	32	22	39	15	10	2	4	3
1908 ..	188	97	91	57	36	30	31	15	10	6	4

By an examination of the table it will be seen that the greatest gains have been in the higher classes. The number of college students has trebled in that time.

On further examination of this table it will be found that the sophomore class is over six times as large as College Students. that of two years ago, the junior class over seven times and the senior class five times as large.

Even more gratifying, however, than these figures is the fact that we have now for the first time since my connection with the institution an almost permanent body of College students. On examining their records I find that every last-year junior that finished the course is now registered as senior except Mr. Stephens, now employed by the Department of Agri-

*(Note. According to the registration there should have been 32 College students in 1906. From a study of the catalog, however, it is found that there were only 28 or 29 entitled to be classed as college students. It is probable that the five specials were not all of college grade as they should have been to have had that term applied).

culture, and the same is nearly true of every class except the freshmen in which a number dropped out. Besides retaining all of our old students the school is constantly drawing a larger number of upper class students from high schools and other colleges. The value of this in building up the school will be seen when one notices that every class in school with one exception is larger than the class below it of the year previous. This one exception is the freshmen class which was abnormally large last year and a number of whose members did not return.

The agricultural faculty of the institution is also the most complete that we have ever had. The faculty is working together in perfect harmony and the student body is loyal and enthusiastic.

The great increase in the number of students in the agricultural classes and especially in the upper classes is throwing a much heavier burden of teaching on the agricultural faculty than ever before. In a great many cases elementary classes have been divided into sections and many more of the upper classes are now required than formerly. This will require in a number of cases a readjustment of salaries between the College and Experiment Station or else the employment of additional instructional force in the departments to be paid for from College funds. The total additional teaching force required or its equivalent in readjustments would amount in the Agricultural School to the employment of at least five additional instructors. The employment of this force would also, to a large extent, solve the problem of carrying on extension work without breaking up classes, and would give much more freedom in carrying out our experimental work, which under the present strain of excessive class work has been seriously broken into.

The next most pressing need of the Agricultural School is the possibility of increasing salaries so as to retain such of our present force as are satisfactory, against the competition of other schools and the Department of Agriculture. While it will not be necessary to make general raises in order to do this, it will be necessary to make a considerable advance in some salaries and a provision for even further advance if necessary. Mr. Turpin will graduate this year and should go on full time for next

year. He will be able to relieve any congestion to the Animal Husbandry department. In addition to the present staff and the promotion of Mr. Turpin a first class irrigation engineer should be employed. Provisions should be made for the teaching of farm mechanics and rural engineering, possibly by this same person, and additional instructors should be furnished in veterinary science, zoology and entomology, and horticulture and botany.

The Agricultural school is seriously handicapped for want of suitable quarters for a number of its departments. Arrangements should be made to furnish larger recitation rooms and more commodious laboratories for a number of these departments. Besides this we should have as soon as possible a dairy building and stock judging pavilion.

There has been a wonderful interest taken in pure bred stock in the last year or two, and as the College is now equipped with a competent instructional force to push this line it would seem an opportune time to increase the equipment along these lines. Six or eight thousand dollars could be profitably spent in the purchase of pure bred stock. With this amount of money we could purchase a sufficient amount of first class animals in their respective lines so that the students would be able to form intelligent ideas of the qualifications necessary for commercial work along these lines. Much of the pure bred stock we have at present time should be discarded as not representative of the best types for commercial work. For instance, out of all our pure bred dairy stock only two of the cows have milk records worthy the name. The others have served as representative types in their respective breeds but their performance has not been of such a nature as to encourage a student to take up their breeding. With our present force to care for them and under intelligent management this pure bred stock could be made to serve as class material and at the same time would give returns on the investment in the production of offspring that would assist in building up the live stock interests of the state as well.

In order to carry on successful work in stock judging it will be necessary to have a judging pavilion. A pavilion accommodating several hundred persons could be built for \$2500. By a little care in

planning this could be arranged to be enlarged in the future and would serve not only for regular class work but for our winter course work, round up institutes and fairs. With a building like this it would be possible to obtain the use of a number of animals for class purposes whose owners would not allow them to be used if they were compelled to stand in the mud or snow.

Under the present arrangements in dairying it is impossible to produce a really first class article or to arouse any great amount of enthusiasm for any kind of work in the minds of the students. A dairy department should for many reasons be in a building by itself or at least in a part of a building more or less remote from other work. For a few thousand dollars a building could be erected that would be clean, sanitary and healthful and which would render this course much more attractive and at the same time much more practical.

A small number of outside lecturers brought in each year would aid materially in building up the standing of the school and in rounding out the education of the students. For this purpose four or five hundred dollars should be set aside each year. Two or three hundred dollars a year could be very profitably employed in paying part of the expenses of members of the teaching force in attending technical societies and general educational meetings.

Specific recommendations with regard to rooms, equipment etc. should, I think come from the department. Two conditions, however, are of general interest and may be mentioned here. In order to be able to arrange the laboratory work of a large number of students it is very desirable that sufficient laboratory equipment be provided in chemistry so that a student may do his chemical laboratory work at any time he can arrange, or at least in any afternoon period. As I understand conditions this would require practically a doubling of the present equipment. The other matter in question is the use of microscopes. All of the microscopes of the institution have been used in common by the botanical, zoological, entomological and bacteriological laboratories, and even then the supply has been very inadequate. The increase in sections in all these classes has precluded the possibility of any such arrangement and each department should now be equipped with a sufficient number of serviceable machines so that the students could do satis-

factory work. At the present time, nine microscopes are owned by the Horticultural department and the remainder, some seventeen in number belong to the Zoological and Entomological Department which formerly included the Bacteriological department. Of these seventeen machines three are equipped with oil-immersion lenses and condensers and are suitable for bacteriological work. To equip properly the bacteriology laboratory two more high power instruments should be purchased and about five of the best grade of the present machines could be transferred from the Zoological department to the Bacteriological department and equipped with condensers and cheaper machines purchased to replace them in the zoological work. For the ordinary class work in botany and zoology a machine costing about \$30.00 is sufficient. The high power machines for bacteriology will cost from \$65 to \$75 each while the other machines necessary for that work would cost about \$47 to \$50, and the present zoological machines can be equipped for this work for \$7.00 to \$10 each. The congested condition of the chemistry work and the lack of microscopes in scientific laboratories has caused more unfavorable comment from the students than any other condition now existing.

With the present drift of advanced agricultural students towards this institution it would seem to me imperative that we build up the advanced work to the highest possible plane of efficiency while the lower classes, if any, may be somewhat neglected, and it seems possible under the present circumstances to look forward to the probability of eliminating some, if not all of these lower classes in the near future.

Respectfully submitted

E. D. BALL
Chairman, Committee
on Agriculture.

Oct 24, 1908.

SCHOOL OF DOMESTIC SCIENCE.

To the President of the College,

SIR: I submit herewith a report of the School of Domestic Science including a review of the work of the department since September 1st, 1907, and a statement of the most pressing needs for the next biennium.

The progress of the School of Domestic Science and Arts equals that of the past bienniums and is as rapid as can be hoped for under present conditions of equipment and situation. Despite the fact that every year brings more and better students, the department is still where it was fifteen years ago—in the basement—using practically the same style and quality of furnishings and equipment. Much more has been done by way of modern convenience for the College farm animals than has been done for the women of the State.

The total registration of students in the high school courses for the school year 1907-08 was 83; that the October registration for 1908-09 is 91. The total registration of college students for the year 1907-8 was 17, that the October registration for 1908-9 is 30, making a total of 100 students in Domestic Science and Arts for the year 1907-8 and 121 in October, 1908-09.

The courses in domestic science have been strengthened by the following changes: The certificate course in domestic science has been eliminated and the two years college preparatory made uniform for all departments of the college; the addition of 3 credit hours in English, 5 credit hours in chemistry, and 2 credit hours in art to the manual training course in domestic science; six college credit hours in technical subjects, 3 credit hours in plant and animal histology and 3 credit hours in economics or sociology added to the college course.

The following extension courses in domestic science has been organized to meet the needs of women and girls who could not attend the day school. Two night school courses—one lecture, the other practical work in cooking; cooking classes organized for eighth grade girls of the city schools and farmers' institute schools of five day sessions organized for women of the State.

A thorough renovating of the department, the addition of a new sink and the removal of dark, built-in cupboards has improved the somewhat unsanitary condition of the laboratories. Tinting the walls and painting the woodwork of the dining room has added greatly to the appearance of the room.

Two hundred dollars would cover the expense of repairs

Equipment and furnishings. and the replacing of broken dishes, worn out utensils and new furnishings.

The growth of domestic science in Utah is largely dependent on the development of the work at the Agricultural College. The progress of the work is dependent on a new home with modern equipment and furnishings; provision for research work in domestic science; and development of trade problems such as tailoring, costume designing, millinery, home decoration, housekeeping, catering, etc. If the dormitory be converted into a Domestic Science building, the probable cost of this will be as follows:

Remodeling of Dormitory.....	\$20,000
Furnishings and equipment.....	10,000
Research work.....	
Materials	1,000
Trade work	2,000
	<hr/>
	\$33,000

In order to meet the physical need of the women the College should have a strong physical education department with a college physician in attendance and a new gymnasium with accommodations equally as good for the women as the men.

Provisions for an amusement hall would do much for general social conditions. A few good pictures and pieces of statuary suggestive of agriculture and domestic science, placed in halls, library and auditorium would add greatly to the general spirit of the work of the school.

Respectfully submitted,

BLANCHE COOPER,

Chairman, Committee

on Domestic Science.

Oct. 24th, 1908.

SCHOOL OF COMMERCE.

To the President of the College.

SIR: The School of Commerce offers two courses, a short

Purpose. course to train employees in the routine work of business office; and a college course to prepare men for the broader activities of a business life.

Men graduating from the college course should become managers of business and captains of industry. While the work of the short course is important, the college course embodies the primary purpose of the school. Moreover, the college course in commerce offers the best preparation for an education in law.

It is the aim of the present faculty to make the work thorough, modern, and progressive. During very recent years commercial education has received a great impetus and has been placed upon an equality with the standard courses in the older and better institutions. The Agricultural College has always maintained that equality, and with the onward movement of the other schools, the School of Commerce must not be allowed to lag behind.

Prominent among modern courses in commerce is economics. So in arranging the outline for the course of study last spring, a large amount of economics was introduced. The following subjects were given for the first time:—Public and corporation finance, commercial geography, and railroad transportation and practice.

Attendance. From present indications, the change was justified. The students in economics, in prescribed and elective courses, numbered twenty-nine in 1907-08, and on Oct. 24, 1908, they numbered ninety-one. This does not include commercial law which now has the same number as last year.

Class	Year 1907-08.	Year 1908-9.
Seniors	2	0
Juniors	0	4
Sophomores	3	4
Freshmen	0	4
Third Year	17	23
Second year	27	14
First Year	42	27
Specials	2	11
Winter Course	12	—
Total, Oct. 24, 1908.		87

Increase of College students	7
Decrease of Preparatory students	22
Increase of Specials	9

	1907 1st term	1908 Oct. 24.	
Economics I	14	26	Goddard
Economics II	10	19	Thomas
Economics III	1	8	Thomas
Economics IV	4	6	Thomas
Economics V	0	8	Thomas
Economics VI (new course)...	0	5	Thomas
Economics VIII (new course)...	0	14	Goddard
Economics 10 (new course)...	0	5	Thomas
Economics 11	22	22	Thomas
Accounting 1	44	30	Goddard
Accounting (winter course)....	9	0	
Accounting 2	24	7	Goddard
Accounting 3	8	20	Goddard
Farm accounting	14	—	Goddard
Typewriting 1	44	34	Davis
Typewriting 2		14	Davis
Stenography 1	6	26	Davis
Stenography 2	8	7	Davis
Penmanship	—	25	Davis

George Thomas, Director, Professor in Economics.

J. P. Goddard, Assistant Professor in Accounting.

A. M. Davis, Instructor in Stenography.

Museum and equipment	\$ 300.00
Typewriters, new, exchanged and repairs.....	750.00
Supplies	250.00
Assistance (labor)	1,100.00
	<hr/>
	\$2,400.00

If an additional instructor is provided to fill the place of Prof. Robinson, resigned, two class rooms in addition to those now in use will be required. They should all be on the third floor.

GEORGE THOMAS,
Director.

Oct. 24th, 1908.

SCHOOL OF MECHANIC ARTS.

To the President of the College,

SIR: The work of the School of Mechanic Arts since the opening of the last school year has been very successful on the whole. There have been no interruptions in the work of the school thus far, which has meant a great deal to the students doing the work.

The students throughout the shops manifest a great interest in their work. They are regular in attendance, careful and earnest in their work, always glad to put in over time when permitted.

The registration of last year was 136 regular mechanic arts students, a few more than the year previous. This, however, does not represent the work of the department, as 59 students from other departments of the College did work in carpentry and 41 students were given instruction in forging.

In addition to the above there were 60 students given instruction in carpentry and forging during the night school period, this being a new feature of the school.

The total number of students receiving instruction in shop work was 296. The registration of this year will probably exceed that of last year by a few students. More agricultural students are taking the work than ever before, so that during the winter months the shops are filled almost to their limit. However by careful arrangement of the work it is believed that we can care for all the students coming to us during the next two years.

The present teaching force will be sufficient to do the work the next two years.

During the last two years very little money has been expended for equipment, as our allotment has been barely enough for supplies, and materials for needed equipment that could be made in the shops. While the shops are well equipped and large sums of money are not needed for additional equipment, at the same time if the institution is to keep in the lead in this work some equipment is necessary.

The carriage shop needs five hundred (\$500) dollars for equipment, to put it in good condition in its present quarters.

The forge shop should have its heating system extended at a cost of three hundred (\$300) dollars. Provision should be made to give horse-shoeing in our forge shops at a cost of about four hundred (\$400) dollars.

In carpentry a great deal of trouble is encountered getting timber dry enough to be suitable for a great deal of the work. It has been found impossible to make first class furniture from the material we have been able to get on the market. In order to remove this serious obstacle I should recommend that the carpentry shop be equipped with sufficient lumber that it may remain in the stock rooms for two years before being used. This would require about \$1,500.

The following machines should be added to the wood working department: one tenoning machine, one sticker, one jointer, one saw gummer, a few tools, costing in all about \$1,100.

The following expenditures should be made for equipment in the machine shops: To put machines which went through the fire of 1905 in condition to be used, four hundred (\$400) dollars; one boring machine and one key setter, about nine hundred (\$900) dollars.

There is great need in this state for a place where young men can learn plumbing and steam fitting. At present it is almost impossible for a young man to enter this field, as the union regulations limit the apprentice system to such an extent that it is almost eliminated. Plumbing and heating requirements are increasing very rapidly in this and surrounding states. Thus we shall be dependent on plumbers from other parts of the country for our work. The facilities for giving this work at the College are good, as the present plant will furnish a great deal of actual experience for the students taking the work. Five thousand (\$5,000) dollars for equipment and supplies will enable us to introduce this work.

SUMMARY OF EQUIPMENT.

Tools and machines for carriage shop.....	\$ 500
Extension of heating system in forge shop.....	300
Equipment required for horse-shoeing.....	400
Belts, pulleys and counter shafts for all shops.....	300
Lumber	1,500
Carpentry shop equipment (machines and tools).....	1,100

Machine shop (machines and help necessary to put old machines in shape)	1,300
Plumbing and steam heating (about)	\$5,000
Total	\$10,400

Shop supplies as follows: lumber, blacksmith's coal, iron and steel, paint, nails, screws, files, sandpaper, emery cloth, glue, wood finishes, glass, shelf hardware, oil, cotton waste, fuses, varnish, grindstones, springs, tool handles, etc., \$8,000.

Respectfully submitted,

J. W. JENSEN,

Chairman, Committee on Mechanic Arts.

Oct. 24, 1908.

SCHOOL OF GENERAL SCIENCE.

To the President of the College,

SIR:

The School of General Science is sharing in the general growth of the College. It has the following registration:

College students and specials	40
College preparatory	26
Total	66

As compared with a total registration last year of thirty-one college students and specials, this shows a gain. This year there are five candidates for a college degree, more than in any other department except agriculture. The department until this year has always had the largest proportion of graduates. In 1907 it had three out of eight, and in 1908 it had five out of eleven. As the department is maintained at no extra cost to the State and as it meets a need felt in the northern part of the State, it is our opinion that it should be continued as an integral part of the College.

Respectfully submitted,

FRANK R. ARNOLD,

Chairman, Committee on General Science.

October 27, 1908.

EXTENSION DEPARTMENT.

To the President of the College,

SIR:

1. The work of the College Extension Department has been confined to Farmers' Institutes, excursions, and State Fairs, so far. The attendance during the year 1907-08 at the farmer's schools and institutes numbered 26,926. There were 288 sessions, an average of 94 present at each session, this inclusive of the women's section.

The members of the faculty participating in the work of these schools and institutes are: President John A. Widtsoe, Director E. D. Ball, Professor Lewis A. Merrill, R. S. Northrop, Geo. Thomas, W. W. McLaughlin, H. J. Frederick, J. C. Hogenson, S. H. Goodwin, Blanche Cooper, Robert Stewart, E. G. Titus, J. T. Caine III, Inez Powell, and Hazel Love. The members of the State Board of Horticulture, Messrs. Thos. Judd, J. Edward Taylor, C. A. Hickenlooper, and J. D. Wadley also rendered valuable assistance. Messrs. J. G. Duffin and W. S. Hansen also helped at two of the schools.

2. During the coming biennium, the department should be more thoroughly organized and equipped. It seems to me that the time has now arrived when we should organize a state system of farmers' institutes. Each county in the state should have a well organized and permanent legal organization, with constitution, by-laws, and officers.

The institute season began on Dec. 2, 1907, and ended April 1st, 1908. There are ten counties in the state that have not yet been visited, this being due to lack of funds. Twenty-five institutes were held, of which four were one-day institutes; ten, two-day institutes; and eleven five-day institutes. The total number of sessions held was 288, and the total attendance 26,926. The amount appropriated for institutes last year was as follows: From Agricultural College funds, \$1,000.00; from State appropriation for farmer's institutes, \$1,500.00; from counties where five day sessions were held, \$528.90. The total cost of our institutes, including the salary of the superintendent, was \$3,485.32. This includes the salary of the superintendent for the year, the salary

of the lady instructor in domestic science, which was paid per diem, entire traveling expenses, and some additional equipment.

There were seventeen local speakers; one instructor was employed by the day at \$3.00 per day and expenses, for work in Domestic Science. There were fourteen lecturers from the faculty of the Agricultural College, of whom ten were members of the Experiment Station staff. There was one special institute, consisting of a demonstration on the arid farm at Nephi, and at which there was an attendance of about 500, which is not included in our total attendance. The purpose of this institute was to stimulate interest in arid farming. There were thirteen women's institutes held, including some seventy-four sessions. The attendance was divided as follows: Men's sessions, 155; total attendance, 11,597; women's sessions, 74; total attendance, 4,964; 59 general sessions; total attendance 10,365. The great need for our work in the farmers' institute department is an increase in our funds, so that every county in the State may be visited.

For the next biennium we should have, at the very lowest estimate, the following amount:

Needs.	For salary of superintendent (2 years) . . .	\$ 3,600.00
	For salary of lady instructor in Domestic Science (2 years)	1,600.00
	For printing annual reports (2)	800.00
	For stenographic assistance and office supplies	1,200.00
	For traveling expenses	2,000.00
	For equipment, charts, supplies, etc. . . .	800.00
Total		<hr/> \$10,000.00

Or \$5,000.00 a year. In this connection, I beg to call attention to the fact that our neighboring state, Colorado, spent last year on this work \$5,003.00; Montana, \$7,500.00; Minnesota, \$18,170.00; New York and Ohio \$20,000.00 each; and Iowa \$27,000.00. Nebraska has \$15,000.00 a year in addition to the salaries of superintendent and assistants. My estimate is based on the permission, as at present, to use the College and Station men when they can be spared from their work.

During the coming season, I recommend that two cars be obtained from the railroads, properly equipped, and taken over the state wherever the railroad lines run. Recommendation. Hereafter, I recommend holding a week's school wherever it is desired, the state to pay railroad and bus fares and hotel expenses en route and the local institutes to furnish hall, provide hotel entertainment for the speakers and to provide all conveyances necessary within the county. I suggest also that this department's work include all demonstration work, farmers' schools and institutes, excursions, fairs, lecture trains, etc.

Respectfully submitted,

LEWIS A. MERRILL,

Oct. 24, 1908.

Supt. Agr. Extension Work.

DEPARTMENT OF AGRONOMY.

To the President of the College,

SIR: The number of students enrolled in the various classes, together with the total number in the Attendance. Department of Agronomy, is as follows:

Year.	Ele. Agr.	Agr. I	Agr. II	Agr. III	Agr. IV	Agr. V	Agr. VI	Agr. VII	Agr. VIII	Tot'l
1907-1908	48	11	5	7	4	0	0	8	*	93
1908-1909†	47	3	3	16	9	1	0	2	2	83

The reason for the decrease in the number of students taking agronomy I this year is that in 1907 this course was required of third year students in agriculture while the high school articulated with the regular college course. This year the third year of the manual training course is not uniform with the freshman year of the college course, hence not so many are taking the manual training work, but more are taking the regular college work. The students who are taking agronomy I this year are juniors in agronomy. Agronomy II has been changed from the sophomore year to the junior year required of only agronomy students. Our advanced students in agriculture this year are mostly from other institutions and have had the work covered by agronomy VII, hence only a few are taking this course this year.

*Not offered.

†To Oct. 17, 1908.

This department conducted during 1907-08 a three weeks' winter course in agronomy with an enrollment of 16 students, mostly farmers of mature years. At the end of Winter course. three weeks most of the students expressed a desire to remain longer, so the course was extended to three months. Ten of the students remaining until the close of the course. During the school year of 1907-08 this department delivered eight lectures on agronomy to the normal students at the State University. The nature study class of the summer school of 1908 was conducted by this Department, enrollment 24. This department also edits the columns in agronomy in the "Deseret Farmer."

Practically all of the above work has been, or is being done by myself. While Mr. John Stephens was my assistant he rendered much valuable assistance by teaching classes during my absence and also by looking after material for laboratory work.

During the present year of 1908-09 this department will continue the agricultural lectures at the State University and will also offer a special course in sugar beet Plans. growing, designed especially for the field men employed by the sugar beet factories. This course will also be valuable to farmers engaged in sugar beet growing. It will extend over a period of four weeks. Aside from this, three days will be devoted during the general winter course in January to agronomy; one session being devoted to each of the following subjects: Cereals, forage crops, soils, root and tuber crops, and one entire day to arid farming. Special lecturers will be brought in for most of this work, but some of the burden will undoubtedly fall upon this department.

The amount of work in the College and Station assigned to this department would justify the appointment of an assistant for the next biennium in order that the very best work be done.

The assistant could devote half of his time to College work and half to the Experiment Station. He could conduct laboratory work, collect material for the same Assistant and teach classes in case of my temporary absence on extension work or otherwise. I should needed. recommend that at least a degree graduate be appointed to this position, although I have no particular person in mind at present.

This department has recently secured some excellent equipment for soil physics and farm crops work. We are now equipping the northwest room in the basement of the main building for an agricultural laboratory to be used by the class in elementary agriculture and also by the class in farm crops. No laboratory work has been given to these classes before in this institution. An outline for twelve experiments or practicums has been outlined for each class. Some of the equipment for this room has already been ordered, so that about all we shall need in addition is glass for the grain case doors and gas fixtures for getting gas into the room for use in laboratory work.

For the soil physics laboratory we need apparatus for the mechanical analysis of soils. Such apparatus can be procured for about \$75.00. With this apparatus the equipment of the laboratory will be second to none in this country.

As yet we have not had time to arrange the little material we have in the agricultural museum. I hope in the near future to make this an important feature as it should be in an agricultural college. I should like to expend about \$600.00 in perfecting the museum by securing collections of soils, grains, grasses, other forage crops, fruits, roots, tubers, etc., in fact samples of all agricultural plants and products of plants produced in the State. Different varieties of grains, grasses, etc., can be shown, both in the grain and sheaf and the comparative value of varieties shown graphically. This will give us valuable educational material which can be secured in no other way excepting by actually visiting the farms themselves. The assistant agronomist, if one is employed, could devote a great deal of his time for a year to this work. This would not only give us a good agricultural museum, which is absolutely necessary to do the best work, but it would also make the assistant agronomist familiar with the agriculture of the State and would thus make him more valuable to the Institution.

A small green-house, about 10x12 feet, should be provided for the Department of Agronomy. This could be built somewhere near the engine house, and would not need to cost more than probably \$400.00. This would give us room to make germination tests, vitality tests, and would enable us to carry on properly certain agronomical experiments in laboratory work. It would

also allow us to work at and properly solve certain problems pertaining to soils and crops which require pot work and greenhouse culture for their solution. This work could then be done in the winter, when it is impossible to work out of doors. The green-house being used for this double purpose, I should recommend that the Experiment Station pay one-half of cost of construction and maintenance, and the College the other half.

A summary of the needs of this department for the next two years follows :

	Glass for grain case doors.....	\$ 18.00
	Gas fixtures for agricultural laboratory...	15.00
Needs.	Apparatus for mechanical analysis of soils..	75.00
	Improving agricultural museum	600.00
	Small green-house, 10x12 feet.....	400.00
	Repairs on present equipment.....	50.00
		<hr/>
	Total	\$1,158.00
	Less \$200 paid by Experiment Station on green-house	200.00
		<hr/>
	Grand total	\$ 958.00

The Department of Agronomy, I believe, has its full quota of students, as compared with other departments, having at present 83 out of 180 students registered in agriculture. The students, so far as I have been able to judge, are all satisfied and are enjoying their work. I am enjoying my work and wish to express my appreciation of your cordial encouragement and support of this department.

J. C. HOGENSON,

Professor of Agronomy.

Oct. 23, 1908.

DEPARTMENT OF ANIMAL HUSBANDRY.

To the President of the College,

SIR: There are now 74 students enrolled in the Animal Husbandry department.

	Animal Husbandry 1, Stock Judging . . .	63
	Animal Husbandry 7, Practical Feeding	6
Students.	Animal Husbandry 2, Study of Breeds.	2 2nd term
	Animal Husbandry 4, Breeding	3 2nd term

If the increase in students is as marked in the next two years as it has been in the past and the extension work is pushed as before, some assistance will be needed in the teaching force after next year.

The equipment most needed is livestock and more horses, cattle, sheep and hogs should be on hand. These would be no great expense, for they should pay for their keep. There are but few herds of pure-breds near here, hence we should keep representatives of the leading breeds. We should have \$4,000 for livestock, divided about as follows:

Horses.

Pair of Clydesdale mares \$1,500.00

Cattle.

1	Hereford bull	200.00
1	Hereford cow	200.00
1	Shorthorn cow	200.00
1	Aberdeen Angus bull	200.00
2	Aberdeen Angus cows	400.00

Sheep.

1	Oxford ram	40.00
3	Oxford ewes	100.00
2	Cotswold ewes	100.00
1	Lincoln ram	50.00
3	Lincoln ewes	100.00
1	Shropshire ram	50.00
3	Shropshire ewes	100.00
1	Hampshire ram	50.00
3	Hampshire ewes	100.00

Hogs.

1	Chester white boar	30.00
2	Chester white sows	50.00
1	Duroc Jersey boar	50.00
2	Duroc Jersey sows	50.00

Total for live stock \$3,570.00

Equipment.

Fences around boar pens	\$ 30.00
Fence around bull pens	80.00
Gravel for yards	40.00
Rope, brooms, etc.	25.00
Paddocks for horses	100.00

Buildings.

Stock judging pavilion	\$1,500.00
Water piped to sheep pens and yards.....	125.00
3 double boar pens	100.00
Drains in barns repaired	25.00
New floor in hog pens	80.00
Steer feeding shed and fences	1,200.00

Total for equipment	\$4,205.00
Total for live stock	3,570.00

Grand total\$7,775.00

(See also Dairy Department needs.)

We are very much in need of a stock judging pavilion, for it is not right to ask nearly seventy students to stand around in rain and snow in order to get the work. Such a building as we need would cost about \$2,500.00, and could be used for all kinds of demonstrations.

For work in feeding and for the general care of the herd a feeding shed should be built so that experiments could be carried on with some success. Boar pens, fences, horse paddocks and an isolation hospital are all needed, so that work in the department can go on successfully.

Respectfully submitted,

JOHN T. CAINE III,

Professor of Animal Husbandry.

Oct. 24, 1908.

DEPARTMENT OF DAIRY HUSBANDRY.

To the President of the College,

SIR:

1. a—The number of students enrolled in the Dairy Department at present is 19.

Students. b—The classes taught are Dairying 1, 2, 3
4 and 8.

c. There are no instructors besides myself.

d. Other work conducted by the Department is as follows: Operation of creamery, management of dairy herd, instruction in winter course, instruction in bacteriology.

2. a—If my connections are severed with the Bacteriological Department, no addition to the teaching
Teachers. force will be required.

b—Other assistance needed is as follows:
One creamery manager and assistant, \$80.00 per month.
Herdsman, \$60.00 per month.

3. New equipment needed. (See also report of Department of Animal Husbandry.)
Equipment
needed.

DAIRY.

1 Jersey bull calf	\$125.00
1 Guernsey bull calf	125.00
1 Holstein bull calf	125.00
1 Ayrshire bull calf	125.00
2 Holstein heifers ..	250.00
2 Ayrshire heifers	250.00
4 Jersey heifers	500.00
1 Jersey cow	200.00
1 Guernsey cow	200.00
1 Holstein cow	200.00
1 Ayrshire cow	200.00
Repairs in cow stable	500.00

CREAMERY.

1 Churn	\$150.00
1 Separator	250.00
1 Ice box	50.00
1 Flue for boiler	100.00
1 Motor	150.00
1 Cheese press	100.00
Equipment in testing room	400.00

4. An open shed on the north side of the present corral is needed. This will cost about \$500.00.

This would make a grand total needed for the Dairy Department of \$4,500.00.

Very respectfully,

T. E. WOODWARD,

Dairyman.

October 22, 1908.

DEPARTMENT OF HORTICULTURE AND BOTANY.

To the President of the College,

SIR: I call your attention to the rapid growth of the School of Agriculture and the corresponding increase in the enrollment of advanced students in the classes taught in this department. The addition of Mr. Favor to the department for the purpose of handling the botanical side of Botany. the work has materially lightened the work. I

have found Mr. Favor a ready and efficient man, and I feel confident that under the new arrangement the class work in botany will make rapid strides if sufficient aid and apparatus be provided. I submit with this report a statement from Mr. Favor in regard to the requirements of the botanical side of the department. I would call particular attention to his statement concerning a laboratory assistant. I fully see the need of such a helper in botany if the highest grade of work is to be done and will suggest that if such a man be secured any of his time not absolutely needed in the botanical laboratory can be used in general horticulture to replace that of Mr. Crockett, who intends to leave the department this coming spring. This is particularly urgent if my time is to be used in the field as much as it has the past few years. If the classes now given are handled in the best possible manner, two men's full time should be provided, and unless part of a third man's time is available for class work this cannot be done with the large amount of institute, station and field work which has always been undertaken. Moreover, it is probable that the outside work will increase because of the success which has attended it recently, in which event I would emphasize the necessity for separating at least in part the teaching from the extension work.

The following tables give data requested concerning classes taught, enrollment and instructors with a comparison of last year.

Course	No.	Instructor	No of students registered to date 1908.	No. of students registered 1907-08.	Instructor	Term	Remarks
Hort.	1	Northrop	33	5	Northrop	1st	{ In this course registration follows winter course.
Hort.	2	Northrop	3	13	Northrop	2nd ..	
Hort.	3	Northrop	8	7	Northrop	1st	
Hort.	4	Northrop	8	6	Northrop	2nd	
Hort.	6	Northrop	1	..	.....	Both	
Hort.	7	Northrop	2	1	Northrop	2nd	{ Registration not yet made
Hort.	8	Northrop	1	..	.....	Both	
Hort.	Special)	Northrop	1	..	.....
Hort.	(Winter)	Northrop	1	28	Northrop	... ..
Hort.	(Correspondence)	Northrop	1	..			
Botany	1	.....	..	11	Crockett	....
Botany	2	Favor	73	35	Jensen	2nd	
Botany	3	Favor	43	14	Northrop	1st	
Botany	4	Favor	43	11	Northrop	2nd	
Botany	5	Favor	3	..	.....	2nd	
Botany	12	Favor	1	..	.....	2nd	
Botany	13	Favor	10	..	.....
Totals			*231	†131			

With the growth in the department as shown above, the requirements in equipment have also grown. Mr. Favor shows in his attached statement the need for considerable botanical apparatus. I agree with him as to the necessity for this material and also emphasize the importance of securing apparatus, plants, shrubs, etc., for use in class work, in landscape gardening, floriculture, and general horticulture. In this connection I also urge the building of more green-houses, that greater variety of floricultural and student work may be done, as well as to provide the department with facilities for growing certain plants needed for demonstration, the conditions for whose development we can not at present provide. Additional and better laboratory room must also be given next year if the classes are to be as large as at present, for we cannot accomplish the desired results when students are crowded and hampered in their work as at present.

The care of the campus coming also under the direction of this department takes considerable time and attention. Work in this branch of the department is progressing satisfactorily and will not require much additional equipment. There are some improve-

*Without winter course and 2nd term heavy registration.

†With winter course and 2nd term heavy registration. In nearly all course of 2nd term the heavy registration comes during February or 1st week of 2nd term.

ments, however, which I desire to make, chiefly in the way of increased plantings of lawn, better trees, shrubs, bulbous and other flowers in order that greater beauty and variety may be the result. A storage house and cellar is also a necessary item in order that our products may be kept for class work and the surplus be properly disposed of.

Following is an estimate of probable expense for two years to keep the department under approximately the condition which exists at present if new items mentioned are granted:

Labor.

Campus (two year period).....\$3,000.00

Green-house (two year period)..... 1,000.00

Buildings.

Green-houses 7,500.00

Storage house 2,500.00

Equipment.

Departmental class work 2,500.00

Campus 100.00

Supplies.

Campus 600.00

Horticulture class work 200.00

Botany—class work 200.00

Total\$17,600.00

Respectfully submitted,

ROBERT S. NORTHROP,

Professor of Horticulture.

October 24, 1908.

SUPPLEMENTARY—DEPARTMENT OF HORTICULTURE AND BOTANY.

To the President of the College,

SIR: During the present session the botanical division of the Horticultural Department has met with unprecedented growth. There are at this date 140 students enrolled for work in botany, as compared to 71 last year. This is an increase of 69 or about 100 per cent. These 140 students are divided among six courses in botany as follows:

Botany 2, Systematic, 73 students.

Botany 3, Histology, and

Botany 4, Physiology, 43 students.

Botany 5, Pathology, 3 students.

Botany 12, Forest Botany, 1 student.

Botany 13, Poisonous Plants, 10 students.

Courses 5, 12 and 13 were not given last year, and while there are a total of 14 students enrolled for these three courses, there will no doubt be a still heavier enrollment in them, as they are offered for the second term.

On account of the large enrollment in botany this year, and the prospects for a still greater increase next year, it becomes apparent that a laboratory assistant is an imperative necessity. For this purpose it is recommended that a sum of \$1,200 be set aside.

With the present large enrollment the work in botany is seriously handicapped for laboratory equipment and laboratory room. During the present term 43 students are at one time crowded into room No. 105 and have for their use only 20 microscopes. This requires two or more students to use one instrument. Satisfactory work with a microscope can be done only when each student has an instrument for his individual use. To meet the increasing needs of the botanical work it is respectfully requested that the sum of \$2,500.00 be set aside for the use of the botanical division during the next biennial period; this sum to be used for the purchase of microscopes, microscopic accessories, physiological and ecological apparatus.

There is likewise urgent need for additional laboratory space, and it is respectfully requested that two additional rooms be set aside for the laboratory work in botany.

At the present time the botanical work is affiliated with the Department of Horticulture, and is in the charge of the assistant horticulturist. This arrangement is satisfactory, as the two lines of work are very much allied; but with the growth of the Institution, and with the greater specialization of the botanical work there will soon be need of separating horticulture and botany and the placing of the botanical work in the charge of a full professor.

Respectfully submitted,

E. H. FAVOR,
Assistant Horticulturist.

October 24, 1908.

DEPARTMENT OF IRRIGATION AND DRAINAGE.

To the President of the College,

SIR: In reporting the department of irrigation and drainage the writer is laboring under some disadvantage, having been connected with the department only during the present school year.

There are seven courses offered in irrigation and drainage, most of them required in the junior and senior years of the college course in irrigation and drainage. The aim in this work is to instruct the student in the various methods of applying water in the field for the production of crop; the effect of the soil and moisture environment upon plant production, together with the economic use of water. Water measurement and water division are given an important place in the work. Canal management, so essential to the successful operation of canal systems, is fully treated. Irrigation laws are also considered. Farm drainage of lands in the arid section, their design and construction form the basis of the course in drainage.

Irrigation I is the only course given this year to a class of 36 students. A winter course in irrigation is offered, to begin January 5, 1909.

It will be noticed from the above statement that the work in irrigation is necessarily very much restricted to comply with the law passed by the last Legislature. The work in irrigation engineering is so closely and intimately associated with the agricultural work of instruction and research, that its elimination renders the work of the College incomplete, and its instruction somewhat inefficient. Irrigation engineering has its place as an established branch of agricultural science; and especially is this true in this western part of the United States. I can therefore not urge too strongly that a course in irrigation engineering be provided for in this Institution.

With the present equipment the College can give first class instruction to the students who will call for instruction in the work during the next biennium.

Utah as the pioneer state in irrigation and by the work of the Experiment Station is recognized by experiment stations and the U. S. Department of Agriculture as one of the leaders in the science of irrigation. And for this reason the

Government has co-operated with the State in the furtherance of this important work.

The solution of many of the most important problems in the agriculture of this State depends upon the combined efforts of the agricultural expert and the irrigation engineer.

Yours truly,

J. W. JENSEN,

Professor of Irrigation Engineering.

October 24, 1908.

DEPARTMENT OF AGRICULTURAL TECHNOLOGY.

To the President of the College,

SIR: I have pleasure in reporting the work in agricultural technology. This department of the School of Agriculture first came into existence two years ago, when the following courses of study were offered, most of them as prescribed work in the different agricultural courses:

Agricultural Technology, 1, Mechanical Drawing; Agricultural Technology, 2, Plane Surveying; Agricultural Technology 3, Farm Mechanics; Agricultural Technology, 4, Rural Engineering; Agricultural Technology 5, Hydraulics; and Agricultural Technology 6 and 7, Road Construction; and Road Maintenance.

Of these courses the following are given this year: Agricultural Technology 1, 2, 3, and 5.

When we consider that under the present conditions success or failure in farming operations depends largely upon the judicious use of the farm machinery, it appears that an agricultural course is incomplete in which the students do not spend considerable time studying that which makes the occupation of the farmer so desirable.

The great change from the simple tools to the modern improved farm implements has produced a marked effect upon the life of the farmer. He can no longer be considered "the man with the hoe," but a man well trained intellectually. How much easier he handles the modern crop, though much larger, with modern machinery, than did the farmer of a half a century ago. The effect of improved machinery on the cost of crop production is shown in The Year Book of the Department of Agriculture, as follows: It formerly required 11 hours

of a man's labor to cut and cure one ton of hay. Now the same work is accomplished in one hour and 39 minutes. The cost of the required labor has decreased from 83 1-3 cents to 16 1-4 cents a ton. The amount of labor required to produce a bushel of wheat by hand was 3 hours and 3 minutes, and now it is only 9 minutes and 58 seconds. Mr. J. R. Doge, in a report on American farm labor, makes the following statement: "Farm machinery has relieved the laborer of much drudgery; made his work and his hours of service shorter; stimulated his mental faculties; given an equilibrium of effort to mind and body; made the laborer a more efficient worker, a broader man, and a better citizen."

Suitable laboratories, equipped for this work should be provided as soon as possible. The work at present is given in the junior and senior years, and the number of students now in the work would hardly justify such expenditure.

My reason for devoting so much space to the consideration of this work is on account of its great importance in all fields of agriculture.

Yours truly,

J. W. JENSEN.

October 24, 1908.

DEPARTMENT OF VETERINARY SCIENCE.

To the President of the College,

SIR: There are at present 71 students enrolled in the Veterinary Science department and a number taking the preparatory course intend to take veterinary science next year. We have the following number enrolled in each course in veterinary science:

Veterinary Science I, Vet. Elements, 54 Students.

Veterinary Science II, 1st year Anatomy, 10 Students.

Veterinary Science III, Second year Anatomy, 5 Students.

Veterinary Science IV, Animal Physiology, 11 Students.

Veterinary Science VI, Materia Medica, 7 Students.

Veterinary Science VII, General Pathology, 5 Students.

Veterinary Science VIII, Clinics. All veterinary students take clinics.

Veterinary Science IX, Pharmacy, 5 Students.

Dissection, first year work, 10 students.

Dissection, second year work, 5 students.

I have no assistance in conducting the above courses.

This department is also carrying on experimental work for the Experiment Station, helping out in farmers institutes, looking after the health of all animals belonging to the College and Station and answering numerous inquiries regarding animal diseases. We still have charge of the bacteriology but have been relieved of the teaching of this course this term.

The teaching force required for the next biennium for conducting the work of this department depends on whether we offer the four years of veterinary work leading to a degree or whether we continue along the present schedule. If we offer a degree course in veterinary medicine it will require three more teachers to carry the courses. If we continue according to our present catalogue an assistant must be provided, also assistance for outside work.

If we offer a full course in veterinary science we must have more equipment, consisting of instruments, casting appliances, tables, cabinets, charts, models, etc. The equipment we now have must be increased whether we offer a full course or not.

The building and the class room we now occupy is inadequate for our present needs and attendance. This will have to be enlarged and if we give a full course leading to a degree we must have a new or greatly enlarged hospital building providing more room for dissection, operating and dispensing drugs, and eight or ten stalls for keeping patients. The one class room we now occupy is used for all classes in veterinary science, is not large enough for the elementary course and is poorly heated and ventilated. We should also have an equipped laboratory for teaching physiology, pathology and pharmacy to do effective work. A shed or large room for holding our clinics is greatly needed as now we are compelled to work outside in the rain or snow at some seasons of the year. The students' health is endangered and successful work can not be accomplished.

One of the great needs of the College is an isolation hospital which should be built on the other end of the farm away from all other buildings, for quarantine purposes, where some of our animals which may become affected with an obscure or contagious disease could be held and treated, away from

Assistance
needed.

Room needed.

Isolation
Hospital.

the rest. Other animals coming in could be taken care of and thus not allowing a contagion to spread among our own animals or those brought to the college for the purpose of being tested. This building should be built so that it can be easily disinfected and properly provide for the wants of the diseased. It would not necessarily have to be expensive to answer the purpose. About \$300 or \$400 would pay for the erection of such a building.

At no period since the science of veterinary medicine began to establish and secure a foothold for itself on this continent, has the outlook for the qualified veterinarian been more optimistic or encouraging than it is today, and that this condition bids fair to obtain for years to come no one will, we believe, venture to dispute.

The demand of the world today is that a man shall know one thing well, and for knowing that one thing well, it will give to him abundantly. In view of this fact it is well to consider that if a full course in veterinary medicine is established in this school it should be equal to any, and one which this institution could be proud of. During the past school year 386 cases of disease or blemishes have been prescribed for, or treated at our free clinic, thus giving the students ample opportunity to carry out in practice what is learned in the class room.

There is no doubt that veterinary science would prove to be one of the most popular courses of the College if we offered a full course leading to a degree. The students in this work who remained to the close of last year, are all with us again taking the sophomore year, besides a number who are taking the freshman year. There have been numerous inquiries about our course, on learning we only offered two years of a four year course many have gone elsewhere, for fear the entire course would not be offered and they could not get full credit in another institution for the work done here.

It is impossible for one man to do the best work with the number of subjects to teach and the work to perform that now devolves on this department. Many inquiries about diseases that should be investigated are received. As this State has no State Veterinarian the people look to us for help. In many states the professor of veterinary science of the state college is state veterinarian. This should be adopted in this State. It would provide protection to human lives, as well as to the

live stock interests. If this provision should be made in this State it would help us out at the College and aid in providing assistants in veterinary science.

The following is an estimate of the requirements exclusive of salaries of instructors for the next biennium.

New buildings and changes in hospital.....	\$3500.00
Equipment, Instruments, Cabinets, and Tables (Hospital)	1000.00
Class Room and Laboratory Equipment.....	500.00
Museum cases and glassware.....	200.00
Supplies, Drugs, and Medicines.....	400.00
	<hr/>
	\$5600.00

Respectfully submitted,
H. J. FREDERICK,
Professor of
Veterinary Science.

October 24, 1908.

DEPARTMENT OF POULTRY HUSBANDRY.

To the President of the College,

SIR: I commenced work in this department a short time before the beginning of the last school year. At this time two courses were offered: one regular course extending through the second term, and a short winter course. During the year eight students received instruction in the regular work and thirty-four in the winter course. Up to the present time, nine students have registered for this years work but the chairman of the agricultural committee informs me that a large number of agricultural students have not completed their registration and that when this is done the present enrollment, undoubtedly will be doubled. At the present time poultry work is a required subject in only the second year agricultural manual training course.

As to the future requirements of the department, besides the regular running expenses, our most urgent needs are better accommodations for practical work in artificial incubation, brooding and general management. The importance of this part of the

work can scarcely be over estimated. Every year thousands of dollars worth of poultry products are being imported into our state and surrounding sections of the country, which could profitably be produced by our own farmers if they were prepared to give this important industry the attention and careful management that it deserves. Our most urgent need is for a new incubator cellar. At present we do not have sufficient room for the incubation work of the station and we have no suitable place to give the students the necessary practice in this important phase of poultry work. For \$600 we can build a suitable building for the experimental work of the Station and then the present one can be used entirely for the student work.

We should also have a better representation of the more common breeds and varieties of farm poultry. For \$100 we can probably obtain enough representative stock to meet our needs.

Four large colony houses should also be provided to be used entirely for student and practical demonstration work. When once established, this part of the poultry plant would be self-sustaining. These four houses can be built for \$125 and will have a housing capacity of 160 laying hens.

Summary of Needs Exclusive of General Maintenance.

Incubator Cellar	\$600.00
New Stock	100.00
Colony houses	125.00
	<hr/>
Total	\$825.00

Respectfully submitted,

GEO. M. TURPIN.

Oct. 28th, 1908.

Assistant Poultryman.

DEPARTMENT OF DOMESTIC ART.

To the President of the College,

SIR: In compliance with your request I hereby present a brief report of the Department of Domestic Art.

The present enrollment, Oct. 22, 1908, is one hundred and two.

Students.

The following is the order in which the classes meet, with enrollment and instructors:

Course	No.	hr. class meets	Days	No. of Students	Instructors
M. T. D. S. Sewing	1	8:40 to 10:20	W. Th. F. S.	35	Miss Vibrans Miss Crookston
M. T. D. S. Sewing	5	9:30 to 10:20	Tue. Thur.	8	Rhoda B. Cook
M. T. D. S. Sewing	3	10:20 to 11:10	daily	16	Rhoda B. Cook
D. Sc. Sewing	8	10:20 to 11:10	daily	11	Miss Vibrans
D. Sc. Sewing	7	10:20 to 11:10	Tue. T. S.	10	Miss Crookston
M. T. D. S. Sewing	6	12:20 to 1:10	daily	14	Rhoda B. Cook Miss Vibrans
M. T. D. S. Sewing	5	2 to 3:40	Tue. Thur.	32	Rhoda B. Cook Miss Vibrans
M. T. D. S. Sewing	3	2 to 3:40	Wed. Fri.	28	Rhoda B. Cook Miss Vibrans

2nd. There are three instructors in the Department including the head of the Department. Of these, two are giving full time to the work, while the third is a student assistant giving us four hours daily. The increase in the number of students registered in the different courses in the department, and the promising outlook we have for the coming biennium may make it necessary that additional instructors be employed.

3rd. The following is an estimate of the requirements for the next two years.

Sewing machines	\$150.00
Repairs for sewing machines	25.00
Carpet	125.00
Requirements. Adjustable forms	30.00
Two dozen chairs	30.00
One dozen tables	25.00
Cabinets	50.00
Chiffoniers	45.00
Pattern papers	15.00
Miscellaneous supplies	60.00
Total	\$555.00

4th. Much of what has been said regarding a women's building in a number of the biennial reports might well be repeated in this, for, while the Domestic Art Department is very pleasantly located, and we are very well satisfied with our location, there is much in the way of equipment and arrangement, that could be done for the further progress of our work. We are heartily in sympathy with the domestic science workers who are still located in the ill-lighted and poorly ventilated basement, and hope that the time is not far distant when we shall have what the department so urgently needs—a permanent home large enough to provide for all the different lines of Domestic Science and Domestic Art work.

5th. In considering plans for the future I suggest that at some time we establish a course in domestic art leading to a degree. At present the domestic art work all comes in the high school course, consequently those who graduate with the degree of bachelor of science in domestic science not having had any instruction in domestic art for four years, are poorly fitted to teach the work as many of graduates are required to do upon taking a position in domestic science. Therefore I suggest that we put some branches of domestic art into the college course in domestic science, or establish a course in domestic art leading to a degree.

Respectfully submitted,

RHODA B. COOK,

Assistant Professor of Domestic Art.

Oct. 24, 1908.

DEPARTMENT OF ART.

To the President of the College,

SIR: 1. (a) We have a total enrollment of 149 students in the department.

(b) The classes are Art 1-1 with 29 students, Art 1-2 with 22 enrolled, Art 2-1 with 22, Art 2-2 with 15, and Art 3 with 31, Art 4 with 15, and Art 5 with 14 students enrolled.

(c) I am instructor in Art 1-1, Art 1-2, Art 2-1, Art 2-2, Art 3, Art 4, and Art 5. Mr. David Huges is assistant in Art 5 and Art 3 (5 hours).

(d) At present the department has very little time for anything but teaching.

Teachers. 2. (a) During the next two years we should have two instructors in the department.

(b) We shall not need more assistance unless courses are increased.

Equipment needed. 3. As to equipment we should have another bulletin with shelves and strips for hanging charts, etc.; the new room should be painted and a sink placed therein; we should have three tables and two stands for modeling purposes; 50 pounds of plasticine or modeler's wax; a tin or zinc lined box for keeping modeler's materials; 20 to 25 small models of historic ornament, carved wood or casts; a large case for department materials and examples of good applied art; 15 adjustable tables; 20 or 30 examples of good pottery, table ware, etc.; and a show card writer's outfit. Examples of good applied art should be procured whenever opportunity presents itself. We may also need more locker space.

Room. 4. We shall not need more room unless our special students increase so as to demand a private studio room.

General. 5. When we are more free as to instruction work, I believe a stereopticon course of say six lectures on the history and purpose of the fine and applied arts would be beneficial given to the whole school. Of course these should be very carefully prepared, and submitted to you or someone you may appoint, for correction or suggestions. Great care should be exercised in the selection of proper slides or pictures, if we can get a good reflector for the lantern.

I believe the school would be benefited if we had a general exhibition room in which could be placed a permanent exhibit of work with explanation of courses.

Large photos of fine architecture, sculpture, painting, and design applied to iron, wood, textiles, etc., would make for the refinement of the whole school, especially if properly placed in the various halls.

We should have, if possible, exhibitions of fine and applied art from the best work of the state at least once a year. The exhibition need not be large nor confined to paintings

alone, but should be very carefully selected. Not enough care in selection was given to our last exhibition.

A home for domestic science correlation would be beneficial. This should not be elaborate, but a model of inexpensive house adapted to Utah conditions. Care should be taken to get good architecture. The interiors could be designed by the Domestic Science and Art departments, while the Mechanic Arts department could make the furniture, etc. I believe this would become a source of education to the people of the State as well as to the students.

Respectfully submitted,
CALVIN FLETCHER,
Art Department.

Oct. 24, 1908.

DEPARTMENT OF BACTERIOLOGY.

To the President of the College,

SIR: There are at present thirty-six students enrolled in bacteriology. Professor Woodward has charge of the class.

This is all the bacteriology at present offered.
Needs.

More equipment is absolutely necessary to do effective work in this course. We need some microscopes, as at present we only have those we use conjointly with the Zoology Department. We must also have a new steam sterilizer and autoclav for sterilization. We also need more of the different glassware used in a bacteriological laboratory.

The following is an estimate of the requirements for the next biennium:

2 Triple nosepiece high power microscopes at \$65.00..	\$130.00
6 Double nosepiece, at \$40.00.....	240.00
1 Large steam sterilizer	30.00
1 Autoclav	80.00
Laboratory glassware	100.00
Supplies for laboratory	300.00
Total	<hr/> \$880.00

The present quarters of the laboratory are too small for the class; there must be more room provided as the class grows year after year. We should also offer more courses in bacteriology.

In connection with the general courses now offered we should have an advanced course elective to students having completed the general course and wishing more bacteriology.

This course is required of all agricultural and domestic science students and should be well provided for.

Respectfully submitted,

H. J. FREDERICK,

Oct. 24, 1908.

DEPARTMENT OF CHEMISTRY.

To the President of the College,

SIR: I submit herewith a report of the Department of Chemistry for the biennium ending June 30th, 1908, together with an estimate of the requirements for the next biennium.

The courses offered in this department have been slightly changed during the last year to meet more fully the requirements of the students attending the institution. The courses in assaying, history of chemistry, photography, and an introduction to elementary chemistry have been eliminated, while chemistry of the soil and physiological chemistry have been added. The addition of these courses has been made necessary by the students who are specializing in agronomy and veterinary science.

The past two years have witnessed a very rapid growth in the department, especially is this true in the case of students requiring advanced work. The enrollment for the year ending June, 1908, was one hundred and twenty. Of this number sixty-three were registered for advanced work. At present there are one hundred and six registered in the department and fifty-three of this number are registered for advanced work. This latter number will likely be materially increased, as there are two classes which are not conducted until the second semester. There will probably be about ten students in each of these courses. The class in agricultural chemistry during this biennium has had an annual enrollment of thirty-nine students. This is the largest advanced class, and is an increase of over

Growth.

five hundred per cent for any other period. All of the courses in this department have been given during the last biennium with the exception of the courses in industrial chemistry and research chemistry.

During this period the courses in General Chemistry and Physical Chemistry have been conducted by Prof. West. The remaining courses during 1907 and 1908 were conducted by Prof. Stewart, while during 1908 and 1909 they are being conducted by the writer.

The instructional force, realizing the rapid advancements being made in their line of work and its great bearing on agriculture in general, have shown a desire to keep abreast of the times in their lines of work. During 1907 and 1908 Mr. Porter and the writer were on leave of absence studying in eastern universities. During the present year Prof. Stewart and Mr. Harris were granted leave of absence for the same purpose and Mr. Porter is still at Harvard.

The ventilating system of both the College and Station laboratories has been completed during this biennium, so that the noxious gases are carried away from the workers in the laboratories.

An automatic arrangement, run by an electric motor, has been installed for the winding of the gas, thus doing away with trouble and inconvenience of winding by hand.

Important collections of glycosides, alkaloids, chemical elements, fluorescent solutions and organic preparations were added to the illustrative specimens of the laboratory.

New equipment has been added to the department in the form of new books, periodicals and book cases. However, considerable yet remains to be done in this line, as there are many more books and periodicals which are absolutely essential if the best of work is to be done in the department.

The present teaching force will probably be sufficient for the next biennium for the conducting of the work of the department. However, provisions should be made for the employment of a storeroom keeper during ten months of each year. This would require \$15.00 per month.

The present general chemistry laboratory is crowded and if the increase is as great during the next biennium as during the last there will not be accommodations for these students. The present laboratory will admit of three new desks being in-

stalled, and the locker space divided. If this be done there will be room for the students in general chemistry during the next biennium. Provisions should be made for the installing of these new desks and dividing of the locker space in the present desks. There are also some of the present desks which require considerable repairing.

At present there is no room for giving the laboratory work to the thirty-nine students in gricultural chemistry, and to use the words of Dr. Noyes, "A satisfactory knowledge of organic chemistry cannot be acquired from a text book or from lectures alone. A large amount of laboratory work is also required." This is just as true of agricultural chemistry as of any other branch of chemistry. Provisions should be made for laboratory facilities for these students.

Prof. Stewart is desirous that the present photographic laboratory be converted into a chemical laboratory for the use of the head of the department. The plumbing and equipping of this laboratory will cost \$600.

There should be three new sets of analytical balances for the use of students in quantitative analysis. As in the past, provisions should be made for the purchase of chemical supplies to replace those used up by the students, also for the purchase of gasoline.

Provisions should be made for the purchase of necessary periodicals, books and book cases for the department library.

The following, in addition to provisions for the employment of the instructional force, is a statement of the needs of the department for the next biennium:

3 new desks for general chemical laboratory	\$ 450.00
Summary. Overhauling and dividing locker room of present desks.....	200.00
Plumbing and equipping laboratory for head of department	600.00
Book cases	150.00
3 Sets analytical balances	375.00
General equipment	500.00
Chemical library, books and supplies	500.00
Storeroom keeper	300.00
Chemical library, books and periodicals.....	500.00

Gasoline	600.00
Equipping of laboratory for agricultural chemistry..	1,000.00
Total	\$5,175.00

Respectfully submitted,

JOSEPH E. GREAVES,

Assistant Professor of
Agricultural Chemistry.

Oct. 24th, 1908.

DEPARTMENT OF ENGLISH.

To the President of the College,

SIR: In reply to your letter I make the following brief report of the present condition of the English Department and its probable needs during the next biennium.

1. (a) The total number of students at Students. present enrolled in the department is 437. A slight amount of duplicate registration reduces the number to about 425. They are distributed as follows:

(b) English 1	22
English 4	144
English 5	111
English 6	81
English 7	41
English 8	8
English 12	6
Elocution 1	9
Elocution 2	5
Elocution 3	10
Total	437

(c) Teacher.	No. of periods per week (in English)	Total number of students.
C. Larsen	19	108
N. Alvin Pedersen	18	93
Amanda Holmgren	17	71
Sara Huntsman	18	73
Charlotte Kyle	15	54

I. B. Evans	5	16
Mr. Porter	5	14
Miss Whiting	5	8
	<hr/>	<hr/>
	102	437

Names of instructors in various classes:

English 1.

Section 1—Mr. R. Porter	14
“ 2—Miss A. Whiting	8
	<hr/>
	22

English 4.

Section 1—Amanda Holmgren	19
“ 2—N. A. Pedersen	21
“ 3—N. A. Pedersen	27
“ 4—Amanda Holmgren	30
“ 5—Charlotte Kyle	23
“ 6—Charlotte Kyle	10
“ 6—Amanda Holmgren	14
	<hr/>
	144

English 5.

Section 1—N. A. Pedersen	21
“ 2—C. Larsen	28
“ 3—I. B. Evans	16
“ 4—Charlotte Kyle	21
“ 5—Amanda Holmgren, C. Larsen....	8
“ 6—Sara Huntsman	17
	<hr/>
	111

English 6.

Section 1—Sara Huntsman	32
“ 2—C. Larsen	25
“ 3—N. A. Pedersen	24
	<hr/>
	81

English 7, 8 and 12—C. Larsen.....	55
Elocution 1, 2 and 3—S. Huntsman.....	24

The average number of students for each instructor this year is 69, distributed as follows:

C. Larsen.

English 5.....	28
English 6.....	25
English 7.....	41
English 8 and 12.....	14

108

N. A. Pedersen.

English 4.....	48
English 5.....	21
English 6.....	24

93

Amanda Holmgren.

English 4.....	63
English 5.....	8

71

Sara Huntsman.

English 5.....	17
English 6.....	32
Elocution	24

73

Has work in physical education.

Charlotte Kyle.

English 4.....	33
English 5.....	21

54

Also has history.

I. B. Evans.

English 5.....	16
----------------	----

Also has history.

Mr. R. Porter.

English 1.....	14
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Miss Whiting.

English 1.....	8
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(c) The average number of students for each instructor just given does not include the work in English I, taught by student assistance, Mr. Porter and Miss Whiting. Their

classes are small at present (22), but will be filled to overflowing during the winter season.

In connection with this average it should also be noted that Mr. Evans and Miss Kyle give only part of their time to English: the latter giving six hours a week to history, the former giving all of his time, except 5 periods a week, to history and government; furthermore, Miss Huntsman gives a period daily to physical education.

(d) The amount of work done by the Department in addition to the actual instructional work tabulated above is very considerable, and is, I am afraid, usually ignored or at least underestimated. We have been given general supervision, in whole or in part, of debating, of student and College publications, and of dramatics. Each of these activities consumes vast amounts of both time and energy.

In debating a series of inter-class contests is being instituted to furnish opportunity for practice in public speaking and debating, and to train men for the inter-collegiate contests—the only intellectual contests fostered by our schools today.

Every week a large bulk of manuscript must be sorted and sifted and amended, for Student Life. This alone is demanding more time, more care and attention than we can afford to give it at present. We have also had the preparation of quantities of advertising material, articles for papers, magazines, etc. Then the College catalogue and annual circulars, each in turn, draw heavily upon our time and resources.

Already preparations for presenting a modern comedy are under way. In addition there will be several select recitals, given chiefly by the students in elocution; these are given free, and serve as a very efficient means of advertising the College in Logan. But the amount of time and energy spent in trying out, coaching and training the students for these recitals and dramatics is far beyond the average estimate.

2. If the growth of the school continues in the same proportion as this year we shall need, for efficient teaching, a considerable increase in our faculty. We shall need for the high school and college work either all the time of our present faculty and one new instructor, or else two additional members. As mentioned above, Mr. Evans and Miss Kyle give an aggregate of half

Miscellaneous
work.

Needs.

their time to history, and Miss Huntsman gives a period daily to physical education. This division of labor, with its scattering of interests and energy is, in my opinion, undesirable, incompatible with highest results, somewhat deleterious to the interests of both departments concerned. I wish to recommend most heartily that we abolish it next year, and that our teachers of English (in the high school and college) give all their time and attention to English, and nothing else.

This year, as in past years, in order to care properly for the prescribed high school and college courses, the department was forced to employ student help for English 1. This method, adopted only as a last resort, is unsatisfactory, and I strongly recommend that it be never resorted to again. Some mature experienced, not necessarily scholarly person, should be employed to teach English 1, as long as it needs to be given. I wish to make the suggestion that an experienced and well-qualified lady be employed to relieve the department of physical education for the girls, and at the same time help us by taking charge of English 1. I should not recommend this division of interest for any other course in the English department.

(b) Other Assistance. The ideal, which I hope to see fully realized in a year or two at the most, is to have a teaching force sufficiently large to give personal attention, e. g., correction and consultations, to the written work of every student in this department. Until then, we shall continue to require assistance—readers to correct the themes of English 4 students. It is difficult to find competent readers; so far, only one has been obtainable. A large step in the right direction has been made this year by shifting sections so as to enable Miss Holmgren to read and correct two of the three weekly themes of her 63 students in English 4. We shall continue to need a slight amount of inexpensive student labor for checking, filing and recording themes.

3. Beyond a collection of mounted pictures to serve as illustrative material in the various courses, there is but one grave need, which is, however, felt in every course given. I mean increased library facilities—new material, of course (the library has been neglected for several years, and is woefully behind)—but more especially a considerable number of duplicate copies. In the courses in literature, e. g., our general course, English 6, we cannot possibly expect students to buy all the books they should read, and they expect, and rightly,

to be relieved by the library. Now, send 80 students there, and provide them with a single copy, or even three or four copies, and the results are distressing, hampering and delaying the entire course in a most noticeable manner. I have, personally, endeavored to relieve the dire necessity in this particular course, but much remains to be done here, and, in a lesser degree, in all the courses.

The library is the laboratory of the English department, and the laboratory supplies have not been kept up to the standard set by the various other departments.

4. No more rooms are needed except as new teachers may be employed. The two rooms now used conjointly by English and history should ultimately revert entirely to our department. The centralized position occupied by us this year is a most appreciable improvement over last year's assignment of rooms.

The department needs a small office. It is the largest department in school, yet is the only department without that convenience. It would be of great service in many ways, e. g., department faculty meetings, consultations, etc.

5. Most of my suggestions have been embodied in this report. The work is much better organized and systematized than last year; everything is working smoothly and efficiently. The one suggestion not already made is that next year sufficient allowance be made in making up the English faculty, to enable us to offer extension work in Logan. If this can be done and we could know in time to advertise and plan for the work during the summer, the scope of the College can be very materially widened.

Respectfully submitted,
CHRISTIAN LARSEN,
Professor of English.

October 25, 1908.

DEPARTMENT OF GEOLOGY AND MINERALOGY.

To the President of the College,

SIR:

1. (a) To date the number of students enrolled in the department in all classes is ninety one.

(b) Classes taught with enrollment as follows :

	Geology 1, Physiography	48
Students.	Geology 2, General Geology	31
	Geology 4, Mineralogy	4

A course in assaying, for which eight students have already made application, to be given the second half year.

(c) All instruction in the department is given by myself.

(d) Up to the present time the only other work conducted by the department is a little ore analysis and assaying for persons who send rock and ore samples to us. This work, I feel, should be continued, as it is a means of advertising the institution and a branch of its work in a small way. But aside from this outside accommodation work it is my hope, if it meets with the approval of the President and Board, to begin a geological economic map of Cache County, in the near future. This movement, I believe, would meet with the hearty approval of the U. S. Geological Survey, from whom we may hope to secure some co-operation in the work.

2. The teaching force required during the next bien-
 Needs. nium will not probably need to be increased. I
 anticipate, however, that some little assistance in
 the field work and laboratory, after the present
 year, and as the department grows, will be needed.

3. The equipment of the department, for the most part, I am pleased to state, is quite complete. Only a few repairs and additions are needed. For teaching geology, mineralogy and the work in the assaying we are well prepared, through our mineral and petrographic collections are somewhat depleted and scattered. At a little expense, however, these missing minerals and rock specimens can be replaced. A renumbering and tabulation of our collections is being made as fast as time will permit. And it is my purpose to add to our mineral and petrographic collections as fast as opportunity will allow. This, I think, will best be done by students and alumni as we stimulate interest in the department.

To do thoroughly up-to-date work in the course in physiography, some new equipment is needed. A few relief models and maps would be a great help in the class room. The department is also badly in need of a relief globe for the work in

physiography. With these few wants supplied the department will be in a first-class condition.

By way of suggestion I would add that a very desirable addition to the equipment of the department would be such apparatus as is necessary for the preparation of rock slides for microscopic analysis. This equipment, exclusive of the microscope, could be added at a very little expense, and thus make it possible for us to do some effective work along this line.

The needs of the department, as you will see from the above, are few. Of course, for the work in assaying and mineralogy a few repairs and supplies are needed from time to time throughout the year. I should say that \$500 would amply supply our needs for the next biennium, including all equipment and supplies I have enumerated.

4. With laboratory and museum room, the department is well supplied for its present and immediate future needs. In the mineralogical laboratory a small hood for taking care of the fumes would be a desirable addition. Since giving up room 283 to the physics department exclusively, the department of geology is in need of a class room. In our present quarters we are unable to perform any class room experiments, which is a serious handicap in teaching the course in physioigraphy. Room 76 is provided with only one laboratory desk, and it is not large enough to accommodate the students in the class.

5. Further, I can suggest only a rearrangement and addition to some courses that might be offered by the department, which I hope to be able to consider with you personally, at a later date.

Respectfully submitted,
H. C. PARKER.

Oct. 24th, 1908.

DEPARTMENT OF HISTORY.

To the President of the College,

SIR: The Department of History now has one hundred and ten students, enrolled as follows:

Students.	Government 1 (Mr. Evans)	32
	History 2-1 (Mr. Evans)	25
	History 2-2 (Mr. Evans)	16
	History 2-3 (Miss Kyle)	26
	History 4 (Mr. Evans)	11

As far as I can tell the present teaching force will be adequate for conducting the work of the department during the next two years.

As to new equipment in order to carry on this work successfully, I believe that our greatest need is books. In my opinion the number of history books in the library is sadly deficient. A college course in history certainly must be something more than a slavish memorizing of a single text book, yet our opportunities for outside reading and for comparative essay work are so few, that it is extremely difficult to make more than this of the courses. While we have many very excellent books in history, we need several copies of a number of them, so that a group of students may have access to the same book at once. Furthermore, we need to add to our list many of the scholarly books found in all high school libraries in the East. Only when we have so improved our library facilities can we do the work in history which we should like to do and which the pupils are capable of doing.

Very sincerely yours,
I. BLAIR EVANS.

Oct. 24, 1908.

LIBRARY WORK.

To the President of the College,

SIR: Broadly speaking, all the students in the College are enrolled in the Library Department. We stand ready to assist everyone in any difficulty that it is within our power to relieve. There are fifty-two students enrolled for the study of "Library work." These are divided into four classes, which are taught by the librarian. The work consists of lectures, supplemented by papers prepared by the student in the library. If these classes continue to increase in number, it will be necessary to employ another assistant in the library. The classes are divided as follows:

Section 1..... 8 students	Section 3.....14 students
Section 2.....11 students	Section 4.....19 students

Accessions. The library classes are, however, but a side of the general library work, which is done by the librarian and the able assistant, Miss Harriet Smith.

The following is a summary of library accessions during the period beginning December, 1906, and ending November, 1908:

LIBRARY ACCESSIONS—STATISTICAL.

Books purchased	1,188
Books by gift (including U. S. public documents)	913
<hr/>	
Total books	2,101
Pamphlets by gift	1,358
Pamphlets on exchange	784
<hr/>	

Total pamphlets	2,141
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Total accessions of titles	4,243
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Present (estimated) strength of the library:

Books	17,200
Pamphlets (estimated)	16,723
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Total	33,923

The year's accessions are classified as follows:

Cyclopædias, reference books, etc.	51
Periodicals	237
Philosophy and religion	45
Political and social science	358
Natural science	135
Useful arts	305
Fine arts	53
Literature and language	526
History, biography, geography	169
United States public documents (unclassified)	222
<hr/>	
Total	2,101

From the list of donors to the library, we select only a few for special mention. The professor of the English Department presented the library with some \$40.00 worth of books, consisting of fifteen duplicates each of works of the Anglo-Saxon period of English literature. This generous act on the part of the English professor has convinced the librarian of the need in that department for duplicate copies of books of required reading for the English classes.

A gift has been received from the First Presidency of the Church of Jesus Christ of Latter-day Saints, consisting of eight volumes of the publications of the church.

A very beautiful cast of Michael Angelo's "Madonna and Child" has been presented to the library of the College by Mr. and Mrs. George H. Champ of Logan.

During the last year the library has had in its charge ten large paintings of the Alice Art collection, kindly lent by the Utah Art Institute. These paintings have hung on the walls of the library and have made the room much more attractive. We realize, however, that they have been lent to us temporarily only, and that they may at any time be taken away. The library should own some works of art, either reproductions of masterpieces, or it might be that our own state artists would, for a nominal price, provide the library of a state institution with pieces of their work.

There is one improvement in the library that I have come to consider almost a necessity. The floor of the library should have a heavy covering of cork carpet or some other like durable invention, that would deaden the sound of footsteps and the movement of chairs, and insure a quiet, peaceful atmosphere, so necessary to advantageous reading and study. This would require an outlay of about \$375.00. As the book stacks are now nearly filled, it will be necessary to have a new stack each year to hold the new accession of books. These stacks can be purchased for \$80.00 each.

I must repeat the request of the library in regard to binding. Having completed many of the files of the United States Agricultural Department publications, which consist mainly of small bulletins, published from time to time, it will be wise to bind and preserve them. This is the most necessary literature for an agricultural library and must be kept complete. The

complete files of the various Experiment Station bulletins and reports should also be bound, as soon as complete volumes are acquired. To bind these files will probably require \$300.00.

One of the most urgent needs of the library is that its files of periodicals and society publications be completed. The library is very weak in this particular. For general reference there is no broader or more easily accessible source of information. These volumes of periodicals are offered for sale by different book companies at a low price, and each year become more scarce and expensive.

The growth of the library during the last two years has been far from what we wish it might be. The college departments should be supported in a more substantial way. The technical and scientific branches taught demand special technical books, which are always very expensive. It is necessary to have the very latest literature on the subjects in order that the College may keep the front rank in industrial education. Every department of the College is calling for new and more books. Besides filling the demands of the departments, there are other classes of books that the library must provide for the general reading and the preparation of the student for life and citizenship. The least possible estimate that can be made for the purchase of books, including periodicals and binding, is an annual appropriation of \$2,000.

Respectfully submitted,

ELIZABETH CHURCH SMITH,
Librarian.

Oct. 24, 1908.

DEPARTMENT OF MATHEMATICS.

To the President of the College,

SIR: There are at present writing three hundred twenty three students in the Department of Mathematics. There are fifteen sections in all, and they are as large as they should be with one or two exceptions. The enrollment by classes is as follows:

Mathematics	1	.....	21
“	2, Section 1	.....	28
“	2, “ 2	.....	8
“	2, “ 3	.....	29
“	2, “ 4	.....	27
“	2, “ 5	.....	32
“	2, “ 6	.....	27
“	3, “ 1	.....	49
“	3, “ 2	.....	21
“	3, “ 3	.....	19
“	4, “ 1	.....	35
“	4, “ 2	.....	24
“	5, “ 1	.....	4
Special	.....	5	5

There are four instructors in the department: Mr. Rudolph gives his entire time (25 hrs.); Mr. West, Teachers. 5 hours; Mr. Parker, 15 hours, and Mr. Hansen 10 hours. The head of the department has 17 hrs.

There are two classes conducted for city and county teachers who come for work on Saturday. This work is a continuation of the work begun in Summer School.

There are at present 72 hours work in the department. This would require more than full time of three Needs. Teachers and the natural increase in attendance will require that at least four teachers be provided for the coming biennium.

The department needs another class room on the second floor, where most of the work is conducted. All the rooms require some repairs, such as blinds, recalcimining, etc.

The department will require about two hundred dollars for new equipment. At present the advanced work is seriously handicapped by not having models, and a conservative estimate of our needs is made in asking for the above named amount.

The work of the entire department is going nicely, and in general the students are satisfied with the work given.

Yours truly,
W. S. LANGTON.

Oct. 24, 1908.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

To the President of the College,

SIR: Replying to your letter of October 17, I have the honor to report as follows:

There are enrolled, this date, in the department proper, 147, in the band, 28; a total of 175.

The work done is both practical and theoretical. For practical work the students drill as infantry four days in the week. For theoretical work they are assembled one day in the week. In this work they are divided into two classes, advanced and beginners—eighty-one advanced, sixty-six beginners; band not classified. Each class is subdivided into four sections, all of which are taught by myself except one section of beginners which, due to conflicts in hours, I am unable to meet. This section is taught by Cadet Captain W. J. Crocker.

No addition to the teaching force will probably be needed.

An armorer to care for the equipment and armory is needed. This work has been done satisfactorily, in the past, by a student, at a cost of about ten dollars per month.

A small sum should be set aside for the purchase of parts of rifles and other material needed for repair purposes. Twenty-five dollars for the biennium should be ample.

The maintenance of the target range near the city intake, east of the College, is estimated to cost thirty dollars for the biennium, labor and material.

The greatest need of the department is a new drill hall. The present one—70x90 feet, with ten large pillars obstructing the floor space—is too small to accommodate more than half our number, except for the most elementary exercises. Our long winters make it necessary to use a drill hall more than schools in a more favored climate.

It is difficult to arouse and keep the interest of the students in this work, due largely to a feeling on the part of the students that the reward for successful work (1 credit hour) is inadequate. To remove in a measure this criticism I recommend the adoption of a rule something to this effect: “Whenever a

Important
suggestion.

student successfully completes the prescribed work in the military department he will be reported to the Faculty, who will, if his standing in the other work of the school warrants, certify his name to the governor of the State as qualified for commission in the National Guard or other volunteer force."

I would also recommend, as tending to the same end, that the trustees or the Legislature be requested to authorize the remission of all fees to a limited number in the department (say the field officers and the captains). In some schools these positions carry with them a small salary. This would affect about five cadets annually, and as these positions are filled by competent examination from among the best and most soldierly-appearing cadets, it would be an added incentive to do good work in the department.

Very respectfully,

H. R. PERRY,

Capt. 29th Infantry,

Professor of Military Science and Tactics.

Oct. 24, 1908.

DEPARTMENT OF MODERN LANGUAGE.

To the President of the College,

SIR: There are registered in the department of Modern Languages ninety-eight students, distributed as follows:

Students.	German I.	41
	German II.	14
	French I.	21
	French II.	5
	Latin I.	7
	Spanish II.	2
	Teachers, German Course	8
Total		98

As compared with a total registration of sixty-five last year, this shows a marked gain. It was expected that the enrollment in Spanish II would be larger and Miss Whiting has been employed to give the course. There were four applications for Spanish I, but as it was an elective for all and only two of the students could arrange for the course at a time the instructor

could give it, it was not given. With the increasing size of German I it is desirable that it be given in two sections, and in order that the work may be well done, it is advisable that the Latin and Spanish be either dropped or given on alternate years, or an extra instructor be employed, but the classes are too small really to warrant the last alternative. For the first time a College extension course is being given in German, and the department contemplates making this a regular feature of the work, giving French and German on alternate years. The department has had the kindest sympathy and scholarly recognition from the president and faculty and asks for a continuance of the same.

Respectfully submitted,
FRANK R. ARNOLD,
Professor of Modern Languages.

DEPARTMENT OF MUSIC.

To the President of the College,

SIR: Herewith I beg to hand you report of the Music Department.

1. (a)	Enrollment	180
(b)	Choir class	60
	Band	30
	Orchestra (estimate, not yet completely organized)	16
	Mandolin and guitar (do.)	16
	Glee club	20
	Vocal quartet	4
	String quartet	4

(c) G. W. Thatcher, Mrs. L. E. Linnartz, Wm. Spicker, S. E. Clark.

(d) Private pupils, 30. Auxiliary band and orchestra work, and opera and oratorio work.

2. (a) I believe we should not cut our instructing force down, but it will be necessary to make some changes next year.
Per Biennium

(b) Our salary list should be, if possible, increased to \$3,200.00 per year.....\$6,400.00

3. (a)	New Equipment :	
	Medium-priced piano for gymnasium.	250.00
	Orchestra and band music	100.00
	Choir	50.00
	And we could use four saxophones in band to splendid advantage, to cost	400.00
3. (b)	Tuning and repairing pianos for practice.	100.00
	Total	<hr/> \$7,300.00

4. No other rooms are needed.

5. Should like more protection from conflicts during drill and lunch periods, as those are just now our best class hours. At present we cannot do our very best work because of the numerous classes and meetings held then.

In the matter of the saxophones, I feel justified in asking for them in view of the condition of the band equipment, it being in better condition than when we first took hold of it, without much extra expense to the College.

Yours sincerely,

G. W. THATCHER,
Director.

Oct. 24, 1908.

PHYSICAL EDUCATION FOR MEN.

To the President of the College,

SIR: Having assumed my duties, as Professor of Physical Education, on December 1st, 1908, I find that both phases of physical education, athletic and physical training, are provided for.

For physical training, the gymnasium is badly in need of equipment. Much of the apparatus is not usable on account of being broken and out of repair.

The lockers and bathing facilities are inadequate for the present needs of the students. One of the first and most important aims of physical training is hygiene, and it is impossible properly to educate the students to hygienic principles without furnishing them the means of living up to them.

Fully one hundred new lockers are needed in the dressing room and the bathing facilities should be entirely renovated.

Out door athletics are well supplied with a quarter-mile

cinder running track, a football and a baseball field, but more adequate arrangement should be made for seating the spectators at the athletic contests.

There is scarcely any provision made for indoor athletics, the gymnasium being too small for the holding of the contests. As indoor athletics and games are growing rapidly in popularity with the students and our athletes compete in these mid-winter sports with the students of other schools, there is an overwhelming necessity for a gymnasium of a suitable size and equipment for these purposes.

I submit an estimate of the funds needed for the next two years:

New parts for broken apparatus and repair for same.	\$ 100.00
New apparatus	400.00
100 new steel lockers	500.00
New bathing facilities	500.00
Bleachers for athletic field	500.00
Miscellaneous equipment and maintenance.....	1,200
Total	<u>\$3,200.00</u>

Respectfully,
C. O. TEETZEL.

Dec. 15, 1908.

DEPARTMENT OF PHYSICAL EDUCATION FOR WOMEN.

To the President of the College,

SIR: I respectfully submit the following with reference to the department of physical education for women:

A new gymnasium—the same to consist of a new building separate and distinct from the main building—thoroughly and scientifically equipped with all the modern apparatus necessary for the highest physical development of both men and women.

In addition to the gymnasium, I should suggest that the same building also contain a lecture or recital hall, with a seating capacity of 1,500, built with a stage, suitable for the presentation of the College dramatics (plays) and musical (operas) entertainments. The present auditorium in the main building, owing to its poor accoustic properties and its small

stage, is wholly inadequate to the needs of the school, and we are forced to rent a hall for our public entertainments.

The most crying need of the Agricultural College of Utah, at this writing, is, to my thinking, a gymnasium. That a school of its size and rank should offer scarcely any facilities in the way of physical training to its hundreds of young men and women is a deplorable if not a disgraceful situation. Surely the Legislators of the State will awaken to the urgent need of its most important institution and grant an appropriation of funds to meet that need. As to the amount of the appropriation, the lowest possible estimate of such a building and equipment would be \$50,000.00.

I should like to suggest further that a regular teacher of gymnastics, scientifically trained in the best schools of physical training in the country, be engaged to take charge of the physical education of the young women of the school. Inasmuch as no appropriation has ever been made for a regular teacher of gymnastics for women, this work has fallen upon one of the instructors in another department. Under this system one hour a day is all the time that can possibly be allowed for the work in the gymnasium. It is impossible in this short time to give any individual or corrective work to the various pupils or to arouse the interest in physical education that should characterize an institution of this size. A skilled instructor, whose whole time could be given to the work, should be in charge of the gymnasium. I suggest that an appropriation of \$800.00 to \$1,000 be made to pay such an instructor.

I sincerely feel that the needs enumerated herein must be met before very long, if the school is to do justice to itself and its students.

Very respectfully yours,

SARA HUNTSMAN,

Instructor in English and
Physical Education.

Oct. 24, 1908.

DEPARTMENT OF PHYSICS.

To the President of the College,

SIR: There are thirty-nine students now taking work in the Physics Department. A first course in physics is being given in two sections. It is a three hour course.

Physics 1 will probably be changed next year to a four-hour course, and will be given in two sections, and physics II, a four-hour course, will also be given, so that at least twelve hours of teaching will be required.

Past appropriations to this department have not only been small, but they have been mostly used for procuring shelving, laboratory desks, glass cases, etc., so that the general equipment is very poor, I believe inferior to that of any department of the school. We shall need \$1,200.00 for equipment in order to do effective and up-to-date work.

Our present location is very good. The south, east, and west fronts make it convenient for the work in light. Since the work in agronomy II, or soil physics, which is a course in applied physics, is probably more closely allied to my department than any other and the apparatus for the conducting of the one is to some extent duplicated in the other, I would suggest that the soil physics laboratory be moved to the south wing of the main building on the second floor adjoining the Physics Department.

Very truly yours,

F. L. WEST,
Professor of Physics.

Oct. 24, 1908.

DEPARTMENT OF ZOOLOGY AND ENTOMOLOGY.

To the President of the College.

SIR: The Department of Zoology and Entomology has made very satisfactory progress during the past two years.

The number of students enrolled is considerably greater than ever before in the history of the Department. This increase is due to the increased number in entomology I and zoology II, and a general increase in the advanced classes as shown by the schedule appended.

The five students shown as entering zoology II in the second term, are the sophomores in veterinary science, who take a special course in animal parasites (zoology 9) during the first term and enter the regular work in zoology for the second term.

INSTRUCTORS, COURSES AND STUDENTS IN ZOOLOGY AND ENTOMOLOGY.

INSTRUCTOR	COURSE	Sec.	CREDITS		RECITATIONS		HRS. LAB.		STUDENTS		TOTAL STU.	
			1st T	2nd T	1st T	2nd T	1st T	2nd T	1st T	2nd T	1st T	2nd T
Smith.....	Zoo. 1.....	$\left\{ \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \end{array} \right\}$	2	2	2	2	2	2	6	6		
			2	2	2	2	2	2	18	18		
			2	2	2	2	2	2	38	38	94	45
			2	2	2	2	2	2	32	32		
	Zoo. 2.....	$\left\{ \begin{array}{l} 1 \\ 2 \end{array} \right\}$	3	3	2	2	2½	2½	31	31	40	94
	TOTAL.....		14	14	12	12	13	13			134	139
Titus.....	Zoo. 5.....		3	3	1	1	5	5			11	11
	Zoo. 8.....		3	3	..	1	2½	5			6	1
	Zoo. 9.....		3	..	2	..	2½		22			
	Ento. 1.....	$\left\{ \begin{array}{l} 1 \\ 2 \end{array} \right\}$	3	..	2	..	2½		40		62	
	Ento. 2.....		3	3	2	2	2½	2½			7	7
	Zoo. 10.....		3	3	3	3	9	3			1	1
	Ento. 4.....		3	3	3	3					1	1
	Spl. Biol.....		2	2							1	1
											(Horton)	
											(Hoff)	
	TOTAL.....		23	17	12	7	24	21½			89	22
Ball.....	Zoo. 3.....		2	2	2	2					10	10
DEPARTMENT TOTALS.....			39	33	26	21	37	34½			233	171

Prof. Titus' work in zoology 10, entomology 4, and special biology are courses given single individuals, and in each case there exists a special reason why the course should be given. Mr. Hoff and Mr. Horton are taking major work in the Department and two of these courses were arranged for them while the special biology was arranged for Superintendent Thompson. These three courses are given in the form of laboratory work and special conferences, and while they do not require as much time as that of ordinary classes with the number of credits they are still considerable of a burden and the number of hours set down is an approximation of the amount of time taken. Besides the work scheduled, special laboratory periods have been arranged for irregular students. Part of this work is, however, carried on at the same time as work shown in the schedule, so that the number of hours given is a fair statement of the work done.

Besides the work in instruction and investigation, this department is charged with the building up and care of the zoological museum. Two of the staff have also spent considerable time in Farmers' Institute work. Seven or eight lectures are given every year to the normal students of the University of Utah. Several popular lectures have been delivered and a large amount of committee work has been done.

In order to handle properly the amount of teaching at present required, without infringing on the time devoted to investigation work, there should be provision made for increased assistance from College funds. On the basis of time actually employed in instruction at present, without allowing for any increase, the College should provide at least two-thirds of Prof. Titus' salary, all of Assistant Professor Smith's, and in addition \$300.00 should be appropriated for assistance in laboratory work and museum building. The following shows the present salary schedule of the Department:

	Station.	College.
Ball (from department)	\$ 600.00	\$
Titus	1,500.00	300.00
Smith (ten months)		1,000.00
Horton	480.00	
Total	\$2,580.00	\$1,300.00
Less Government refund	600.00	
	\$1,980.00	\$1,300.00

In this statement, Prof. Smith's salary is given for the ten months under the present appropriation. He was employed for twelve months, beginning Sept. 1.

The number of students in zoology 2 and entomology has increased to such an extent, that it will be necessary to provide a very large number of additional microscopes
Equipment in order to do effective work in these classes.

While this will involve a considerable cash outlay at the present time, it becomes almost a permanent equipment, as a microscope, well cared for, will last for fifteen or twenty years. The furnishing of a microscope to a student does not, therefore, involve a cost of more than \$2.00 per year. The excess of fees received by the department over that expended for supplies would pay for these microscopes in three or four years. Besides this, there should be a number of skeletons purchased for the comparative work in physiology. A few of these to replace broken ones and the remainder to complete the series. As long as the department is bending its energies largely toward economical lines, it will be cheaper to purchase prepared slides for the work in histology and embryology than to attempt to make them.

A museum is a source of considerable instruction of a general nature to the students if rightly arranged and properly labeled. In order to spread the material out for exhibition and provide for additions as they may come, two more of the large museum cases should be purchased and two stands for the exhibition of insect cases should be made. In order properly to exhibit the collection of insects with explanatory labels, so as to make them an educational feature, a number of insect cases should be purchased and another drying case arranged for. The museum, when properly built up and labeled, becomes a constant attraction to the visitor and a constant source of advertisement to the College. Lack of time in the past has interfered with the accomplishment of plans in this direction, but with a small amount of appropriation for cases and assistance, the present material could be made quite attractive.

The following is a summary of the requests
Needs. for the biennium:

Equipment for the laboratory:

30 Student microscopes	\$ 900.00
5 Skeletons	100.00

Slides and prepared models for histology and embryology	60.00
Miscellaneous minor equipment	50.00
Equipment for museum:	
Museum cases and insect stands	250.00
Insect cases and drawers	125.00
Drying cases	15.00
	<hr/>
Total equipment	\$1,500.00

Supplies.

Zoological supplies (laboratory specimens, dissecting material, glassware, chemicals, etc.)\$	250.00
Entomological supplies (pins, labels, cork, mounting material, vials, glassware, etc.)...	75.00
Embryological supplies (embryos, slides, reagents, glassware, etc.)	75.00
Miscellaneous departmental supplies (cards, stationery, ammunition, museum supplies, stands, etc.)	100.00
	<hr/>
Total supplies	\$ 500.00

The department is seriously handicapped at the present time on account of lack of room. At least one class room should be assigned to the department and an additional laboratory room. On account of the size of the class in entomology, it has been impossible to hold either the recitation or the laboratory work in the office room as in the past, and we have been compelled to use a class room at some distance for this work.

With one more laboratory room, the advanced work could be carried on without interruption or interference from elementary students. The office could then be reserved for the work of advanced students. In much of the advanced work it is necessary to lay out a considerable amount of material, which should not be disturbed by other classes.

If the rooms now used for work in soil physics and the agronomy class room were given to this department we should be able to do all of our work in a satisfactory manner. If this arrangement could not be made, room might possibly be found for the entire department on the first floor of the south

wing, should the domestic science department be transferred to other quarters.

The only suggestion that occurs at the present time with reference to the betterment of the work of this department, and this might equally apply to some of the other scientific departments, is that too much of the detail work is now being done by the higher salaried men. This could, to a considerable extent, be remedied through a system of graduate fellowships or scholarships, in which a few of the brightest students would be paid from \$200 to \$400 a year and allowed from one-half to two-thirds time work in college in addition. With this system, the heads of departments and associates would be relieved of much of the detail work in preparing for laboratories, cleaning after them, etc., and would be able to accomplish much more. At the same time we should be training a corps of young men from which we could choose our future assistants, and supply other institutions with tried teachers. These men would also be able to take up the work of the department in the absence of the regular staff.

Respectfully submitted,

E. D. BALL,

Prof. of Zoology.

E. G. TITUS,

Prof. of Entomology.

Oct. 24, 1908.

THE EXPERIMENT STATION.

To the President of the College,

SIR: The following is a very brief statement of the activities of the Utah Experiment Station for the past two years, together with an outline of plans and requirements for future work.

This has been one of the main lines of work of the Station for some time, and during the past four years has been carried on in co-operation with the office of Irrigation Investigations, U. S. Department of Agriculture. During this time the Greenville farm has been very largely devoted to this work, and in connection with this, check experiments have been car-

Irrigation
and Drainage.

ried on in the vegetation house and some of the fundamental principles have been tested in co-operation with practical farmers in different portions of the State.

In as broad and comprehensive an investigation as this it is impossible to draw accurate conclusions until the results have been confirmed by repeated tests. As a result, a vast amount of information has been accumulated and the experiments have now been carried on long enough to warrant their publication. One bulletin has been published, and several more are in course of preparation and will be issued as soon as possible. The value of the results already obtained can hardly be overstated when one considers that the fundamental laws underlying the complex relation between irrigation, cultivation and cropping are being worked out. These results will be of benefit to every irrigated acre in the State, and in the intermountain region. In many cases these experiments have gone far enough to establish these laws on a practical working basis, in other cases they only point the way for further search. The Utah Experiment Station possesses the largest and most complete plant for these investigations to be found in the United States, and for that reason the Office of Irrigation Investigations of the Department of Agriculture is anxious to continue its co-operation and has notified us of its willingness to appropriate \$10,000 for the continuation of the work, provided the State does the same.

An appropriation of \$15,000 by the State for these investigations will mean the ultimate solution of many problems in irrigation and drainage that are becoming more and more urgent as the years go by. The results already obtained show that the amount of water used by the average farmer is far in excess of that actually required under present methods, and as a further result it has been shown that by proper methods of conservation this amount can be still further reduced.

The working out of the practical application of these facts will require time, money and skill, but when they are made part of the agricultural practice of the State it will mean an increase of nearly one-third in the irrigable area and the further possibility of saving or reclaiming thousands of acres of valuable land now being threatened with ruin by water-logging and alkali.

The six experimental arid farms provided for by State

funds have now produced their fifth crop. One of the primary objects in establishing these farms in the different localities was to demonstrate the possibility of arid farming in the different portions of the State. The wonderful increase in interest in this industry and the great development which has taken place in different sections has already yielded returns far in excess of the entire cost, and every indication is that the industry is only in its infancy and that the next few years will see still larger areas reclaimed. The State will benefit in many ways from this development. The sale of lands alone will return many times the cost of the investigation, but of even more benefit to the state will be the increased wealth of many communities. A still further gain will be experienced in the transference of grain raising to these cheaper lands, thus increasing the area that can be devoted to the more profitable crops, such as sugar beet growing, stock and fruit raising.

Besides demonstrating the possibility of arid farming the object of these stations was to solve problems connected with developing the industry to even higher standards. Such questions as the proper time and depth to plow, the time, rate and method of seeding, the testing of different methods of cultivation, and the different crops adapted to arid conditions have received attention and a large number of experiments have been conducted looking to the solution of these problems. Part of the results of the first three years' work has been published and the remainder of these results and the entire conclusions for the five years' work are now being prepared and will be issued in bulletin form. The work done has been sufficient to solve definitely some of these problems, while others require more time for their solution.

The greatest future benefits to arid farming will come, however, in the introducing and testing of new and better varieties and on selecting and breeding up the best of these in order to develop crops that are adapted to these peculiar conditions. This work was begun on a large scale last year in co-operation with the Bureau of Plant Industry of the Department of Agriculture, and as the result of the first year's work several varieties of wheat have already been found that have outyielded all of those formerly used. Selecting and developing these varieties will require years of work, and can only be done by trained scientists. It will be impossible with the funds

appropriated to employ a specialist on more than one farm, and it is therefore planned to carry on the most of the technical breeding work on one station and to use the other farms for a continuation of certain of the cultural experiments and for the purpose of growing these improved varieties for distribution to the farmer. In addition to this it is planned to take up co-operative investigation with progressive farmers in different sections for the purpose of adapting these methods to local conditions. The amount of money provided for by the present law will be sufficient to carry on the investigations as outlined. Additional appropriations will, however, be necessary for the publication of the results of these experiments.

Through a misunderstanding in regard to the possible use of federal funds no appropriation was made by the Legislature of 1907 for the maintenance of either the Southern Experimental Farm or the Central Experimental Farm. On account of the uncertainty in regard to the future, these farms were maintained for the first half of the season at the least possible expense, nothing being done that was not absolutely necessary to keep the experiments already started from being ruined. Late in the season a deficit appropriation of \$12,000 was created for the maintenance of these farms. Active work was then undertaken in order to develop them as rapidly as possible along the lines of commercial fruit culture.

This farm has been given over very largely to the testing of varieties of the different fruits and vines. All of these varieties except the apples, are now old enough to fruit and some of the more rapid in development, such as the peaches and some grapes, are in full bearing. Much information has been gained as to the most valuable varieties for the region and their proper treatment. In the case of some of the peaches the commercial sorts have been top-worked on those of less value, a small number of each variety being retained to continue the test.

The greatest need of the region at the present time is the development of the fruit industry on a commercial basis. To do this requires that sufficient amounts of commercial sorts be produced to ship in carload lots. The top-worked peaches will begin to bear in another year, and it is planned to increase the number by further planting so that it will soon be possible to ship in carload lots.

The same methods have been employed with reference to the grapes, and it is expected that shipments of three or four standard varieties will be made next year, and that carload lots can be shipped a year or two later.

For the maintenance of the Southern farm for the calendar years of 1909 and 1910, \$6,000 will be required. By the end of that period it is hoped that the commercial sorts will be bearing a sufficient amount to give us valuable results, and at the same time to reduce the further cost.

On account of the varying soil conditions and the uneven nature of the ground it has taken much time and expense to prepare the land for planting. About eleven acres of the new planting will be for commercial tests, while the rest is devoted to varieties. The commercial tests have been planned with a view to carrying on irrigation investigations.

The Horticultural Department is carrying on tests of the value of pruning and thinning of apples and extensive investigations into the nature and injury of crown gall, and hairy root diseases have been started.

The Entomological Department has carried on spraying experiments for the codling moth and investigated the insect of the sugar beet.

The Agronomy Department has tested a number of varieties of grains, vegetables and forage crops.

Twenty or thirty acres more of the farm should be prepared and planted to the commercial varieties of apples, pears and peaches as fast as the work can be done. The lack of buildings on this farm is a serious obstacle to effective work, much time being consumed in running back and forth from the rented quarters now occupied. Funds should be provided for the erection of a house and barn, and for the digging of a well on the place. For the proper maintenance of the farm for the calendar years of 1909 and 1910, together with the necessary planting, \$8,000 will be required, and for the buildings as proposed, \$4,000 should be granted, all of the latter amount to be available the first year.

EXPERIMENTS CONDUCTED UNDER FEDERAL FUNDS.

The equipment provided for by the State some time ago has enabled the Poultry Department materially to increase the scope of its investigations. Experiments are now in progress to discover the factors that affect the vitality of the incubator hatched chickens, and much progress has been made. It has been found that by varying the amount of moisture and carbon dioxide present there is a marked difference in the number of healthy chickens secured, even the weight of those hatched can be varied by changes in these factors. Tests are also being made to discover how the different methods of housing, feeding and breeding affect the vitality of the chickens. The experiments on increasing the laying capacity of hens are being continued. A report on some of this work has already been published in Bulletin 102 and another bulletin will be prepared as soon as sufficient data is obtained. The arid region presents practical problems with reference to both feeding and incubation and there is a wide field for investigation and development of this industry. To carry on successfully the incubation work without interference from the college classes a special incubator cellar should be provided without delay.

For a number of years the Station in co-operation with the Bureau of Plant Industry, U. S. Department of Agriculture has been attempting to increase the sugar content of the sugar beet. As it requires two years to produce seed from a sugar beet it will be necessary to continue this for some time, but the results already obtained have been highly gratifying. In the short time the work has been carried on the sugar content has already been raised several per cent without decreasing the tonnage. Connected with this, the Station has been testing a large number of the different varieties of beets to find the ones best adapted and most profitable for this section. Irrigation investigations dealing with the water requirements of sugar beets have also been carried on in connection with these experiments. While primarily for the purpose of developing a high sugar content in beets experiments have also been conducted with reference to soiling and seed production, and it has been found possible to produce beets yielding an exceptionally large amount of high quality seed, and it seems probable that as a result of

these experiments we shall be able to establish a profitable seed growing industry in this section. At present our seed is preferred by the local growers to any that can be obtained from foreign sources.

Experiments have just been inaugurated in the testing of the known varieties of alfalfa and it is planned to select from these the ones best fitted for the production of forage and for seed production and then by a process of selection to increase the value of these strains for the purposes indicated. A very slight increase in the productive power of the variety used would mean an immense gain to the state and it has already been demonstrated in our experiments that there are certain varieties that will yield over one-third more than others and no doubt even these strains could be increased by proper selection.

Besides the work outlined as being carried on upon the Central and Southern Farms the Horticultural Department is conducting experiments in the thinning and pruning of the different fruits and the diseases of nursery stock as well as some variety testing of fruits and vegetables.

The subject of pruning and thinning has received little attention from the standpoint of western conditions and already in these experiments it has been demonstrated that radical changes in methods commonly employed will give beneficial results.

Feeding experiments have been carried on with sheep, hogs and steers and it is planned to continue these and to take up the work with pure bred and high grade animals to show the difference in breeding the ordinary range stock and the better class of animal.

Tests are also being made to find the most economical mixture of Utah feeding stuffs for the production of beef and mutton.

As a result of using pure bred sires on the ordinary grade cattle the Department has produced some very fine young stock that have attracted marked attention wherever exhibited. Great interest has already been taken in this work and the demand all over the state for pure-bred stock is increasing rapidly. These experiments will be continued and the animals carried through to maturity in comparison with the "native" stock.

The Station has recently purchased a pair of pure bred Percheron mares from which they have already obtained a pair of very promising colts. This work will be continued and increased as funds permit and every effort made to encourage the breeding of heavy draft horses in the valleys of Utah.

The Experiment Station was without a dairyman during the last year and during that time little work with dairy stock was attempted. A co-operative test with the farmers of Green-

village to ascertain the productive power of the
Dairying. average dairy cow was continued with good results. In this work it has been demonstrated

that the farmers with slight expense can test their own herds and discover for themselves the actual profits from each individual cow and by methods of selection and breeding gradually increase the profits. The Station has been fortunate in securing a first class dairyman and the work in bringing up the dairy industry along various lines will now be continued.

The codling moth investigations have been continued and the methods of applying the poison so perfected

Entomology. that it has been possible to control this pest of the fruit growers with a single spraying. The

results have been so uniformly successful that the method has been adopted throughout the entire western country and has almost revolutionized the apple industry. Certain phases of the life history are still in doubt and further tests with regard to the killing power of cover sprays will be continued.

The destructive species of grasshoppers of the State have been investigated and methods devised for their eradication. As a result of these investigations it has been shown that if taken in time it is possible to prevent the ravages of the "warrior" grasshoppers of San Pete and Sevier Counties, and that the "native" hoppers doing injury in other parts of the state may be controlled at slight expense. The results of these investigations are now ready for publication as soon as funds will permit.

In co-operation with the Bureau of Entomology, U. S. Department of Agriculture, the Station has been investigating

the insects injurious to sugar beets and a report
Sugar Beet upon this work is now in press. This investi-
Insects. gation has shown conclusively that the "curly

leaf" condition so injurious to the sugar beets a few years ago is entirely the result of an attack of the sugar

beet leaf hopper and methods of predicting the appearance of this insect and of preventing most of its injury have been discovered. As the sugar beet industry increases the number of insect pests will increase. These investigations will be continued, taking up in turn those most seriously injurious.

A study of the food habits of the native birds of the state has been undertaken in order to discover the injurious and beneficial species. A number of species of birds have been found to be injurious for a few days or weeks during a certain period while during the rest of the year they are of immense value in destroying injurious insects and weed seeds. A preliminary list of the birds of the state and all information available with regard to their food habits is in preparation.

The Chemical Department in co-operation with the departments of Agronomy and Irrigation is carrying on an extended investigation of the production movement of plant foods in the soil, under irrigated and arid farm conditions. Like other investigations dealing with soil problems this will require many years to obtain accurate and reliable results. Sufficient data has already been secured, however, to show that different methods of irrigating and different systems of cultivation produce marked differences in the amount of plant food available to a given crop and it is expected that when these experiments have been continued for a few years longer valuable practical results will be obtained.

The chemical department is also conducting an extended investigation into the milling and chemical qualities of Utah wheats. The results of the first year's work have been published in Bulletin 103. In this bulletin it has been shown that the arid farm wheats of Utah are remarkably high in protein and that some varieties are much higher than others. It has also been shown that the amount of irrigation affects the milling qualities of wheats. These investigations have already been of much value in pointing out the best varieties from these standpoints and as a result the farmers are rapidly changing to the better varieties.

The chemical department is called upon to assist in the sugar beet investigations, in the poultry investigations and in the feeding experiments.

In order to render the work of the Experiment Station

available to the people of the State provision should be made for the popularizing and publishing of the results of its investigations. Much of the best work of the Experiment Station is being carried on under the Adams Fund appropriation. The law provides, however, that none of this fund shall be used for publication of results, the expectation being that the State will provide for their publication. A certain amount of Hatch fund can be used for publishing results but this amount is needed to publish the investigations carried on under that fund. The Station has on hand at present material for ten or fifteen bulletins setting forth results that have been obtained in the investigations. The bulletins would furnish a vast fund of information on the topics discussed and would immediately assist in building up the different lines of agricultural industry in the State. There is besides this a growing demand for practical manuals on such subjects as alfalfa, arid farming, irrigation, stock feeding, apple growing, sugar beet raising etc. The Government funds do not provide for either the preparation or the publication of such manuals. An appropriation of \$2,500 per year to be devoted to the publication of results of the investigations and the preparation and publication of timely manuals on the leading industries of the state would return many times its cost in the increased wealth resulting therefrom.

Summary of Requests.	For the work in Arid farming, as provided for by chapter 116, Laws of 1907	\$10,000
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For the continuation of the work in Irrigation and Drainage during the calendar years of 1909 and 1910, as provided for by chapter 13, Laws of Utah for 1905	10,000
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For the support of the Southern Utah experiment farm during the calendar years of 1909 and 1910, as provided for by chapter 132, Laws of Utah for 1905	6,000
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For the maintenance of the Central experiment farm during the calendar years of 1909 and 1910, as	
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provided for by chapter 132, Laws of Utah for 1905	8,000
For buildings on the Central experimental farm.....	4,000
For preparing and printing bulletins and practical manuals	5,000
Total	<u>\$43,000</u>

One half of the above appropriations to be available each year except the \$4,000 for buildings on the Central Farm, which should be available the first year.

Since the last report, eight bulletins have been published dealing with the various phases of the Station investigations, besides these, several scientific articles and numerous newspaper articles dealing with the practical application of scientific agriculture have been prepared by the Station staff. The general correspondence of the Station is increasing in volume while the development of arid farming and fruit growing have greatly increased the calls for information along these lines. A number of bulletins have been prepared by the Station Staff for which there are no funds for publication and others are awaiting preparation for the same reason. The following is a list of the bulletins published. Bulletin 97, Report of the Southern Utah Experiment Station; 98, Report of the Central Utah Experiment Station; 99, Report on Irrigation and Drainage Investigations during 1905-1906; 100, Arid Farming Investigations; 101, Feeding Experiments with Cattle, Sheep, Swine and Horses; 102, Poultry Experiments; 103, Milling Qualities of Wheat; 104, the Storage of the Winter Precipitation in the Soil.

Two valuable additions have been made to the Station equipment during this period. The lease having expired on the five acre tract known as the "Frankhauser Farm" it was either necessary to purchase the tract or lose all of the money invested in leveling and fluming it for experimental work. Accordingly it was purchased at a total cost of about \$850.00.

General Conditions and Improvements. The work of the Station requiring more team service than was available it was considered advisable to procure a team that could be used for experimental purposes as well as for farm work,

accordingly a pair of Imported Percheron Mares were purchased at a total cost of about \$1500.00.

Besides these, minor improvements have been made in several lines, a sheep feeding shed has been erected, and equipped, better driving horses have been secured, colony houses for poultry have been improved, more of the experimental plats have been leveled, some office furniture and books have been purchased.

The Station as a whole is in better condition to do effective work than ever before in its history, several additions have been made to the Staff and old members retained in spite of flattering offers from outside sources. The spirit of harmony and industry has noticeably increased, and permanence and harmony in the staff are prerequisite in the carrying out of thorough scientific work. There have been a few changes but no important investigation has been broken into or interfered with by those made. In this connection the Station would like to join with the College in urging that sufficient appropriations be granted the institution to provide for increasing salaries of heads of departments at least to the same basis as that paid by similar institutions. It would be more economical in the end to pay even higher salaries than those paid in other institutions. By so doing we could occasionally secure from them their best men instead of continually yielding to them our best ones. The Utah Station has spent much money in training men for the benefit of other institutions.

In closing I wish to express my deep appreciation of your assistance in bringing about the above results. Your intimate knowledge of the Station work, as the former Director, has always been at my command and has been of invaluable service to me.

Respectfully submitted,

E. D. BALL,
Director.

Oct. 24th, 1908.

REPORT OF SUPERINTENDENT OF BUILDINGS AND GROUNDS.

To the President of the College,

SIR: I herewith submit my report as Superintendent of Buildings and Grounds for the biennial period ending Nov. 30th, 1908.

Through the lack of means during the last biennial, we have not been able to do as much along the line of improvements as desired, but there are a few items which I would like to call your attention to. One of the most important, I consider, was the placing of the bell in the main tower so that students in all parts of town can hear it ring. Formerly, only those living south and west could hear its call to classes.

Another item was the placing of a new steel flag pole on top of the main tower so that the flag can be seen from all directions; as also, the calcimining and hard finishing of all the halls and class rooms of 3rd and 2nd floors, making them clean and sweet, with better light. At the President's and Director's residences, the buildings have been improved by plastering walls and putting in cement floors in place of rough walls and dirt floors. The east greenhouse has also been finished; a wall built around the center bed; cement walk laid; iron post and braces put in center to strengthen its construction; and a new boiler put in to improve the heating system.

At the Veterinary hospital, the basement has been made deeper and a new cement floor put in the cellar. The walls have been plastered, a retaining wall built, a new cesspool and drain connected; also a new hitching rail placed.

Respectfully submitted,

CHARLES BATT,

Superintendent of Buildings and Grounds.

Oct. 24th, 1908.

REPORT OF SUPERINTENDENT OF BUILDINGS AND GROUNDS.

To the President of the College,

SIR: I herewith submit a report as per your request, as follows:

Coal Bin enlarged and Cement floor.....	\$ 500.00
New Sectional Steam Boiler.....	1500.00
Needed for the Main Chimney raised about 25ft.....	500.00
Steam heating New Boiler for Dormitory.....	600.00
Plant. Repairs and some changes on steam	
plant for two years	500.00
Fuel for two years about.....	7000.00
Firing Boiler	700.00

The boiler house should be moved to the southwest flat by the south road and a tunnel made to connect all steam, water and gas pipes, also electric wires, with all buildings. The cost would be about		25000.00
Repairs on	Water works and sewerage.....	\$ 500.00
	Water Pipe laid to North Cottage, and.....	
Needed for	Hydrant	30.00
Water Works	The roofs of all buildings will need to be painted and some of the buildings will need to be painted all through (Oil and varnish for floors and furniture, \$500.00)	4500
Necessary		
Painting.		
Improvements.	The west part of the main building on the fourth floor should be finished, the cost will be about	3500.00
	New steps for all main stairways and labor to put them in, with some new flooring	500.00
Needed		
Miscellaneous	Window lights and blinds	300.00
Repairs	Locks and Hardware	100.00
	New Fence around college property	1500.00
	Retaining wall for walk from Dormitory and walk put in good condition.....	150.00
	Cement walk from south main entrance to Mechanic arts building.....	75.00
	New Steps on dormitory terrace.....	150.00
	Cement walk for Experiment Station to north main entrance	50.00
Needed for		
Electrical	New Chimney for Dairy.....	150.00
Lighting.	Lamps, wire, drops, switches. etc....	150.00
	Electroliers for Commercial rooms...	150.00
Respectfully submitted,		
CHARLES BATT,		
Superintendent of Buildings and Grounds.		

Oct. 24th, 1908.

REPORT OF HEAD JANITOR.

To the President of the College,

SIR: As per your request I submit the following estimate

of the money needed for janitorial work for the next two years, beginning July 1st, 1909.

Salary for head janitor (as at present)	\$1440.00
Salary for regularly employed man	1080.00
For student and women labor	2700.00
For supplies	500.00

This is based on actual expenditure for the year July 1st, 1907 to July 1st, 1908. I do not think we can reduce these expenses, as I am sure we have been very economical. I should rather recommend a little increase in this estimate as the work will no doubt increase rather than diminish. For instance, if more buildings, requiring janitorial work, should be added, allowance would have to be made for that. In the matter of dispensing with the services of the regularly employed man I do not think that would be wise. Certainly it would not reduce expenses, as we should have to employ the same amount of labor and student labor would be very unsatisfactory for much of the work now done by the regularly employed man.

Yours Respectfully,

R. O. LARSEN.

Oct. 24th, 1908.

Head Janitor.

REPORT OF THE REGISTRAR.

To the President of the College,

SIR: The registration for 1906-07, 1907-08, and 1908-09 to date, since the last report to the Legislature, has been very satisfactory. There has been a steady growth in numbers, and a rather sudden advance in the grade of the students. The proportion of students doing college work is steadily increasing, the present year, up to date, showing the highest number ever registered. This result is partly due to the work of the State high schools, and partly to the fact that the people of the state are appreciating the superior advantages which the teachers and the equipment of the College afford.

As far as the office is concerned, the condition of the school is best shown by a series of comparative tables, and these are given below.

JOHN T. CAINE, JR.

Registrar.

ATTENDANCE BY SCHOOLS.

	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07
	-1	-2	-3	-4	-5	-6	-7	-8	-9	00	-1	-2	-3	-4	-5	-6	-7	-8
COLLEGE																		
Agriculture.....						8	9	4	5	1	2	2	3	9	20	26	31	72
Domestic Science.....						23	32	21	27	19	14	29	10	14	23	23	15	17
Commerce.....						55	52	47	63	44	28	21	16	16	37	25	29	24
Civil Engineering.....						20	14	20	24	19	17	16	19	19				
Mechanical Engineering.....						3	3	8	5	8	4	3	9	7	30	30	31	15
General Science.....						20	11	12	15	19	28	26	14	17	21	33	36	31
*Specials.....						31	25	31			7	23	5		5	10	6	13
TOTALS	48	117	140	129	130	160	146	143	140	110	100	130	76	82	145	147	148	172
SHORT COURSE:																		
Agriculture.....											5	14	31	50	67	66	50	65
Domestic Science.....												32	33	43	30	24	25	25
Commerce.....												98	87	83	90	89	87	69
Engineering Preparatory.....												37	75	58	91	61	67	50
Unclassified.....						26							13	5	3	9	55	24
TOTALS						26					5	181	239	239	281	249	284	233
MANUAL TRAINING:																		
Domestic Arts.....			35	21	51	47		15	21	34	35	34	60	65	74	60	59	46
Mechanic Arts.....			23	21	17	29	62	74	93	31	54	59	61	109	100	75	85	76
+SUB-FRESHMAN.....						207	249	194	207	249	93							
+SUB-PREPARATORY.....											69	73	68	48	40	36		
SUMMER SCHOOL.....	91	179	164	93	116									27	17	32	61	71
WINTER COURSE:																		
Agriculture.....					20	14	12	10		9	7	8	11	15	28	16	37	96
College Preparatory.....														1	15	13	11	8
Commerce.....																		
Domestic Arts.....			5		23	14	15	8	14	8	5		8	12	4	5		12
Mechanic Arts.....								5	4		12	31	22	25	29	30	32	6
NIGHT SCHOOL																		38
																		124
GRAND TOTALS	139	296	367	264	357	497	434	449	479	491	380	516	545	623	733	603	717	882

*In some of our catalogues these students are classed as below college grade, though they are not.

†These names are used to denote students below regular college work. The blanks in the years 1890 to 1900 are due to the absence of the data needed.

FACULTY AND STUDENTS BY YEARS.

	-90	-91	-92	-93	-94	-95	-96	-97	-98	-99	-00	-01	-02	-03	-04	-05	-06	-07
	-91	-92	-93	-94	-95	-96	-97	-98	-99	-00	-01	-02	-03	-04	-05	-06	-07	-08
Instructors.....	6	7	8	9	11	14	14	13	13	13	12	13	14	15	16	16	22	20
Assoc. Professors ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Asst. Professors.....	1	1	1	1	1	2	2	4	4	4	4	5	2	4	6	10	7	6
Instructors and Assts.....	2	8	9	9	10	10	12	10	11	14	17	20	29	34	31	34	30	35
TOTAL.....	9	16	18	19	22	16	28	27	28	31	33	38	45	54	54	60	59	63
Graduates .....	..	..	..	..	1	..	3	4	3	2	..	..	5	3	2	11	5	2
Seniors.....	..	..	..	4	2	6	14	4	10	8	5	3	10	14	20	3	8	14
Juniors.....	..	..	7	17	8	15	9	8	8	7	14	18	24	7	9	16	17	17
Sophomores.....	..	11	22	20	10	21	31	21	26	13	15	14	31	3	14	30	26	23
Freshmen	48	106	111	73	81	87	64	75	59	59	39	31	..	27	87	61	67	74
Specials.....	..	..	..	15	28	31	25	31	34	20	34	63	12	11	15	33	26	37
TOTAL.....	48	117	140	129	130	166	146	143	140	110	100	139	75	82	145	147	148	172
COLLEGE PREP																		
2nd Year .....	..	..	..	..	..	..	..	..	..	..	..	..	21	23	32	33	31	22
1st Year .....	..	..	..	..	..	..	..	..	..	..	..	..	37	54	35	59	28	28
Preparatory	91	179	164	93	116	207	249	194	207	245	69	73	68	48	37	36	..	..
AGRICULTURE																		
2nd Year .....	..	..	..	..	..	..	..	..	..	..	..	5	10	12	24	22	22	24
1st Year .....	..	..	..	..	..	..	..	..	..	..	5	9	21	35	43	44	28	41
D. SCIENCE																		
3rd Year .....	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..
2nd Year .....	..	..	..	..	..	..	..	..	..	..	10	3	11	22	18	12	11	9
1st Year .....	..	..	..	..	..	..	..	..	..	..	24	29	22	18	12	12	14	16
COMMERCE																		
3rd Year .....	..	..	..	..	..	..	..	..	..	..	..	..	2	..	5	..	..	..
2nd Year .....	..	..	..	..	..	..	..	..	..	..	..	43	26	25	23	34	32	27
1st Year .....	..	..	..	..	..	..	..	..	..	..	..	53	61	53	67	54	55	42
D. ARTS																		
4th Year .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..
3rd Year .....	..	..	..	..	..	..	..	..	..	..	..	1	6	10	16	8	5	3
2nd Year .....	..	..	..	..	..	..	..	..	..	3	5	10	14	23	38	28	31	13
1st Year .....	..	..	..	..	..	..	..	..	..	18	29	25	19	31	17	30	14	27
MECHANIC ARTS																		
4th Year .....	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	..	..	..
3rd Year .....	..	..	..	..	..	..	..	..	..	..	3	6	1	8	9	14	8	6
2nd Year .....	..	..	..	..	..	..	..	..	..	12	7	5	11	3	31	23	24	16
1st Year .....	..	..	..	..	..	..	..	..	..	81	71	43	47	54	68	67	38	54
Optional .....	..	..	..	..	..	26	..	..	..	..	4	..	..	13	8	4	9	65
Winter Course.....	..	..	5	..	43	28	27	23	18	17	24	37	41	53	79	67	78	160
Summer School.....	..	..	..	..	..	..	..	..	..	..	..	..	..	27	21	36	76	80
Names repeated and deducted from total.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	23	9
TOTAL.....	139	296	367	264	357	497	484	449	479	491	380	516	545	623	733	663	717	758
Male	107	215	251	197	265	342	343	329	342	352	276	372	368	437	539	463	407	533
Female	32	81	116	67	92	155	136	120	137	139	104	144	177	186	191	200	194	154

1907-8 Night School, Domestic Arts..... 88
 Night School, Mechanic Arts..... 60
 Total brought down..... 758

TOTAL less names repeated 24..... 882

REPORT OF ATTENDANCE BY RESIDENCE. 1890 to 1909.

	90-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-0	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
Utah	129	268	307	214	292	368	348	315	316	355	257	373	392	471	573	507	562	719	659			
Beaver				5	12	4		2		3	1	1			3	4	11					
Box Elder		4	12	6	11	33	44	25	42	46	26	19	26	17	22	32	27	38	43			
Cache	103	170	155	130	193	251	193	144	155	141	135	210	195	243	266	238	239	438	384			
Avon						2			2			1	1	3	2	2	5	3	7			
Benson						5	3	2						1	1		2	2	2			
Cache Junction ..						5	3						3	1	2		2					
Clarkston						5	1				2											
College				1	2	5	1															
Cornish																						
Cove		1		1		1						1						1	2			
greenville.						1			1	1	2	1						2	4			
Hyde Park.			2	6	1				2	4	3	2	1	5	2	4	6	18	6			
Hyrum	1		2	2	5	3	7	4				2	4	2	2	6	8	13	6			
King													2	2	8	3	3	6				
Lewiston			3	6	14	19	92	4	7	5	1	1		2	8	5	5	4	9			
Logan	67	117	100	82	66	127	96	83	93	84	73	150	119	158	193	160	199	302	278			
Mendon						3	8	1	6	2	1	2	2	3	6	1	7	11	6			
Millville	2	11	11	4	7						2	5	7	4	9	1	1	2	5			
Mt. Sterling						1				1	4	1										
Newton	1	1	1	3	10	16	20	6	16	8	5	3	4	9	11	9	7	10	4			
Paradise		3			6	4	3	2	2		2	1		3	1	1	5	9	13			
Petersboro.			1	3			3	3			5	3	3		5	1		2	2			
Providence.	17	12	7	1	11	14	9	3	2	16	11	7	8	3	5	7	7	15	3			
Richmond		3	6	9	21	22	14	17	7	6	5	8	12	10	14	11	11	10	10			
Smithfield	14	16	18	10	15	19	12	8	4	4	5	3	3	5	7	9	9	13	14			
Trenton						2	1	4	4	3	1	1					1	2	1			
Wellsville	1	6			1	5	2	4	4	5	4	11	10	15	11	5	9	14	18			
Carbon						1		1	3	3	6	5	2	2	5	4	5	2	2			
Davis	2	4	6		5	7	10	15	10	10	6	12	8	13	22	12	13	5	14			
Emery					1			2	1						3	1	2	4	3			
Garfield							1			1		1										
Grand													1									
Iron																						
Juab																						
Kane	1	2	6	6	3	3	6	2	8	6	1	4	4	2	9	15	11	8	11			
Kearney																						
Millard																						
Morgan																						
Mt. Pleasant																						
North ...																						
Perkins ...																						
Rich ...																						
Salt Lake ...																						
Sevier ...																						
Wasatch ...																						
Washington ...																						
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REPORT OF ATTENDANCE BY RESIDENCE 1890 to 1909.

(Continued).

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REPORT OF ATTENDANCE BY RESIDENCE 1890 to 1909.

	90-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-0	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
Colorado.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1	3	3	2	.....	.....	.....	.....
Illinois.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Indiana.....
India.....
Iowa.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kansas.....
Louisiana.....
Maine.....
Maryland.....
Massachusetts.....
Michigan.....
Minnesota.....
Missouri.....
Montana.....
Nebraska.....
Nevada.....
New Hampshire.....
New Mexico.....
New York.....
Ohio.....
Oregon.....
Pennsylvania.....
Wyoming.....
Wisconsin.....
Canada.....
Japan.....
Mexico.....
Russia.....
England.....
South Dakota.....
GRAND TOTAL.....	139	296	367	264	357	497	484	447	479	491	381	516	545	623	733	653	740	767	678			

* To date.

REGISTRAR'S REPORT.

The following table indicates the number of graduates, with degrees and with certificates, from each of the schools during the past fifteen years:

YEAR	Agriculture		Domestic Science			Commerce		Gen'l Sci.	Eng. and M. A.			Totals
	High School	Degree	High School	M. T. D. A.	Degree	High School	Degree	Degree	C.E.	M.E.	M.T. M.A.	
1894 ..	2	1	...	2	1	7	1	1	2	...	...	17
1895 ..	...	1	...	...	...	3	...	...	1	...	...	5
1896 ..	...	3	...	...	...	2	...	1	2	1	...	9
1897 ..	1	1	...	...	5	2	3	4	1	...	...	17
1898 ..	...	...	...	...	2	1	1	1	...	1	...	6
1899 ..	...	1	...	...	1	4	4	1	4	...	3	18
1900 ..	...	...	...	3	2	2	1	1	3	1	1	14
1901 ..	...	...	...	1	1	...	...	3	1	...	1	7
1902 ..	...	...	...	1	...	3	...	2	...	1	...	7
1903 ..	...	1	1	6	2	2	...	2	5	...	2	21
1904 ..	...	1	2	6	2	5	2	5	3	1	2	29
1905 ..	1	2	1	7	4	7	4	4	4	1	2	37
1906 ..	3	...	5	5	1	6	1	...	1	...	2	24
1907 ..	6	2	4	4	...	8	1	3	1	...	5	35
1908 ..	2	2	2	2	1	13	2	5	...	2	4	35
	15	15	15	37	23	65	20	33	28	8	22	281

Total certificates154

Total Degrees127

281

Biennial Report of the Secretary.

TABLE No. 1. Summary of income of the Agricultural College of Utah, being an abstract of the Secretary's reports from the foundation of the institution to the present time.

Years ending Dec. 31 <i>c</i>	FROM THE UNITED STATES				FROM THE STATE ON VARIOUS APPROPRIA- TIONS	FROM ALL OTHER SOURCES, FFES, SALES, ETC.	TOTALS
	Morrill Act of 1890 and Nelson Act of 1907	Hatch Act of 1887 and Adam Act of 1906	Morrill Act of 1862 <i>b</i>	TOTALS			
1889.....	.....	\$ 2,500.00	.....	\$ 2,500.00	\$ 20,000.00	.....	\$ 22,500.00
1891.....	\$ 48,000.00	30,000.00	.....	78,000.00	45,499.51	\$ 3,612.87	127,112.38
1893.....	37,000.00	30,000.00	.....	67,000.00	115,500.00	9,852.54	192,252.54
1895.....	41,000.00	30,000.00	.....	71,000.00	15,000.00	7,253.70	93,253.70
1896.....	22,000.00	15,000.00	.....	37,000.00	23,500.00	5,490.32	65,990.32
1898.....	47,000.00	30,000.00	.....	77,000.00	39,636.40	14,234.08	130,870.48
1900.....	50,000.00	30,000.00	.....	80,000.00	38,429.95	16,614.81	135,044.76
1902.....	50,000.00	30,000.00	\$12,588.06	92,588.06	109,376.68	17,956.59	219,921.33
1904.....	50,000.00	30,000.00	11,837.34	91,837.34	138,953.79	27,832.23	258,523.36
1906.....	50,000.00	36,760.00	15,399.12	102,149.12	158,184.45	41,585.10	301,918.67
1908.....	55,000.00	49,571.94	16,200.79	120,772.73	156,459.80	53,255.24	330,487.77
Total....	\$450,000.00	\$313,821.94	\$56,025.31	\$819,847.25	\$860,540.58	\$207,487.48	\$1,877,875.31

a From Nov. 1 to Dec. 31, 1889. *b* Interest on Land Grant Fund. *c* Each period represents a biennium except 1896 one year and 1906—23 months.

TABLE No. 2, showing the distribution of the income of the Agricultural College and the Experiment Station for educational and experimental purposes from the foundation of the institution to the present.

YEARS ending Dec. 31 <i>c</i>	FOR EDUCATIONAL PURPOSES				FOR EXPERIMENTAL PURPOSES			
	From U. S. <i>d</i>	From State	Miscel.	Total	From U. S.	From State	Miscel.	Total
1889	\$ 20,000.00	.....	\$ 20,000.00	2,500.00	.....	.....	\$ 2,500.00
1891	45,499.51	2,432.90	95,932.41	30,000.00	.....	\$ 1,179.97	31,179.97
1893	115,500.00	6,203.98	158,703.98	30,000.00	.....	3,548.56	33,548.56
1895	15,000.00	3,802.22	59,802.22	30,000.00	.....	3,451.48	33,451.48
1896	23,500.00	2,893.15	48,393.15	15,000.00	.....	2,597.17	17,597.17
1898	39,636.40	8,346.66	94,983.06	30,000.00	.....	5,887.42	35,887.42
1900	38,429.95	10,119.60	98,549.55	30,000.00	.....	6,495.21	36,495.21
1902	109,376.68	13,174.27	185,139.01	30,000.00	.....	4,782.32	34,782.32
1904	125,365.40	23,959.60	211,162.34	30,000.00	\$13,588.39	3,772.63	47,361.02
1906	122,323.98	34,729.59	222,452.69	<i>e</i> 38,840.32	35,860.47	4,765.19	79,465.98
1908	128,563.21	38,806.32	238,570.32	<i>e</i> 50,811.11	27,896.59	13,209.75	91,917.45
Total	\$783,195.13	\$144,468.29	\$1,433,688.73	\$317,151.43	\$ 77,345.45	\$49,689.70	\$444,186.58
								\$1,877,875.31

c Each period represents a biennium except 1896 one year and 1906—23 months. *d* Including interest on Land Grant Fund. *e* Including co-operative experiments in Irrigation and Drainage, etc. *f* Including \$26,288.00 for deficit created in restoration of shops during previous biennium. *g* Including \$12,000.00 deficit for Southern and Central Utah farms not yet appropriated.

TABLE No. 3, showing the average cost per student in attendance during the periods corresponding to tables 1 and 2.

Years	No. of Students	Income for Educational purposes		Cost per Student		Per cent of cost to State
		From State	Total	To State	Total	
1889 ^a	.....	\$ 20,000.00	\$ 20,000.00	.....	.....	....
1891	435	45,499.51	95,932.41	\$114.50	\$220.53	51
1893	631	115,500.00	158,703.98	183.04	251.51	73
1895	854	15,000.00	59,802.22	17.57	70.02	25
1896	484	23,500.00	48,393.15	48.55	99.98	49
1898	926	39,636.40	94,983.06	42.80	102.57	42
1900	872	38,429.95	98,549.55	44.07	113.01	39
1902	1,061	109,376.68	185,139.01	103.09	174.60	58
1904	1,338	125,365.40	211,162.34	93.70	150.35	62
1906	1,396	122,323.98	222,452.69	87.65	159.35	55
1908	1,475	^b 102,275.21	^b 212,282.32	69.34	143.92	48
Total	9,472	756,907.13	1,407,400.73			
Average Cost				80.44	148.58	54

^a Each period represents a biennium except 1896—one year, and 1906—23 months.

^b Deducted \$26,288.00, the amount received from State to cover deficit of previous biennium for restoration of Mechanic Arts Building.

LIST OF PERSONS EMPLOYED DURING BIENNIUM ENDING NOVEMBER 30, 1908.

March 28, 1907.

John A. Widtsoe, President.

E. D. Ball, Director.

April 23, 1907.

J. C. Hogenson, Professor of Agronomy.

Blanche Cooper, Professor of Domestic Science.

J. W. Jensen, Professor of Engineering and Acting Director Mechanic Arts.

Rena B. Maycock, Instructor in English.

Sara Huntsman, Instructor in English.

E. G. Titus, Professor in Zoology.

Frank S. Harris, Assistant Chemist.

Calvin Fletcher, Assistant Professor in Art.

June 4, 1907.

Christian Larsen, Professor of English.

S. H. Goodwin, Professor of Econ. Ornithology.

July 2, 1907,

L. A. Merrill, Supt. Agricultural Extension work.

Aaron Newey, Instructor in Forging.

W. A. Frew, Assistant Instructor in Forging.

H. P. Madsen, Assistant Instructor in Carpentry.

Inez Powell, Instructor in Domestic Science.

Jean Crookston, Assistant in Domestic Arts.

Charlotte Kyle, Instructor in English and History.

N. Alvin Pederson, Instructor in English.

John D. VanWagoner, President's Private Secretary.

Eda Dehlin, Matron of Dormitory.

Fred M. Walker, Professor Physical Education.

November 30, 1907,

Frank L. West, Professor of Physics.

Wm. Spicker, Instructor in Violin.

F. D. Thatcher, Assistant in Carpentry.

March 20, 1908,

J. P. Goddard, Professor of Accounting.

I. B. Evans, Instructor in History.

W. L. Walker, Assistant in Chemistry.

June 1, 1908,

Hazel Love, Instructor in Domestic Science.

C. T. Teetzel, Professor of Physical Education.

H. C. Parker, Instructor in Geology and Mathematics.

Oct. 20, 1908,

- T. E. Woodward, Assistant Professor of Dairying.
- E. H. Favor, Assistant Professor of Horticulture.
- C. P. Smith, Assistant Professor of Zoology.
- A. M. Davis, Instructor in Stenography & Typewriting.
- Alva Hansen, Instructor in Mathematics.

LIST OF RESIGNATIONS DURING BIENNIUM END- ING NOVEMBER 30, 1908.

March 28, 1907,

- W. J. Kerr, President.
- Wm. Jardine, Professor in Agronomy,
- Joseph Jenson, Dir. of Man. Train. & Mechanic Arts.
- Geo. P. Campbell, Professor of Physical Education.
- Eliz. Wyant, Assistant Professor English.
- Ruth Evelyn Moench, Instructor Phy, Education, & Eng.
- W. C. Snow, Assistant in Chemistry.

June 1, 1908,

- D.E. Stephens, Assistant in Stenography and Typewriting.
- John Stephens, Instructor in Agronomy.
- P. A. Yoder, Director.
- F. S. Harris, Assistant Chemist.
- Eda Dehlin, Matron of Dormitory.
- F. M. Walker, Professor of Physical Education.

April 23, 1907,

- L. A. Ostien, Assistant Professor of Mathematics.
- A. P. Winsor, Foreman in Poultry.
- Geo. M. Turpin, Assistant Chemist.

April 23, 1907,

- E. A. Williams, Foreman in Forging.
- N. M. Hansen, Professor of Engineering.

November 30, 1907,

- W. A. Jensen, Instructor in Sten. and Typewriting.
- C. Larsen, Dairyman.

March 20, 1908,

- E. W. Robinson, Professor Science, and Transportation.
- J. A. Bexell, Professor of Commerce and Secy. of B. of T.
- Rena B. Maycock, Instructor in English.

Oct. 30, 1908,

- Inez Powell, Instructor in Domestic Science.
- Geo. Batt, Foreman at Stock Barn.

130 INSURANCE.

COMPANY	AMOUNT	RATE	PREMIUM	EXPIRES
MAIN BUILDING, EXPERIMENT STATION AND CONTENTS				
Allemannia Fire Insurance Co. of Pittsburg	\$ 5,000	\$ 12.50	\$ 62.50	6- 7-10
Farmers' & Merchants' Ins. Co., of Lincoln	5,000	12.50	62.50	6- 7-10
Prussian National of Glittin, Germany.....	5,000	12.50	62.50	6- 7-10
Spring Garden Fire Ins. Co. of Philadelphia	5,000	12.50	62.50	6- 7-10
Seattle Fire & Marine Ins. Co., of Seattle..	5,000	12.50	62.50	6- 7-10
Germania Fire Insurance of New York....	7,500	12.50	93.75	6- 7-10
German Fire Insurance of Pittsburg.....	5,000	12.50	62.50	6- 7-10
Spring Garden of Philadelphia.....	2,500	12.50	31.25	7- 5-10
Milwaukee Mechanic Ins. Co. of Phila....	8,000	12.50	100.00	6- 7-10
Northwestern National of Milwaukee....	8,000	12.50	100.00	6- 7-10
German Fire of Peoria, Ill.....	5,000	12.50	62.50	6- 7-10
Southern Insurance Co. of New Orleans ..	7,500	12.50	93.75	7- 9-10
Spring Garden Fire Ins. Co. of Philadelphia	2,500	12.50	31.25	7- 9-10
Guardian Insurance Co. of Pittsburg.....	5,000	12.50	62.50	7- 9-10
Ohio German Fire Ins. Co. of Toledo....	2,500	12.50	30.00	10- 2-10
Dixie Fire Insurance Co. of Greensboro...	2,500	12.50	30.00	10- 3-10
Home Fire Insurance of Utah.....	20,000	12.20	244.00	3-19-11
Home Fire Insurance of Utah.....	18,000	12.20	219.60	8- 8-11
Svea Insurance Co. of Sweden.....	5,000	12.20	61.00	8- 8-11
Westchester Fire Office, New York.....	4,000	12.20	48.80	8- 8-11
Germania Fire Insurance Co.....	2,000	12.20	24.40	8- 8-11
Glenfalls Fire Insurance Co.....	2,000	12.20	24.40	8- 8-11
MECHANIC ARTS BUILDING AND CONTENTS				
North River Insurance Co. of New York..	2,000	12.00	24.00	4-11-09
New Brunswick Fire Ins. Co., N. B., N. J.	2,000	12.00	24.00	4-11-09
Buffalo-German Insurance Co.....	2,000	12.00	24.00	4-11-09
Ohio German Fire Insurance Co. of Toledo	1,000	12.00	12.00	4-11-09
Girard Fire & Marine of Philadelphia....	2,000	12.00	24.00	4-11-09
Globe and Rutgers Insurance Co.....	1,000	12.00	12.00	11- 2-09
The Hamilton Insurance Co.....	1,000	12.00	12.00	11- 3-09
Dixie Fire Insurance Co. of Greensboro...	1,000	12.00	12.00	5- 5-11
Milwaukee Mechanics Insurance Co.....	4,500	12.00	54.00	6- 7-10
Northwestern National Ins. Co. of Mil...	4,500	12.00	54.00	6- 7-10
German Fire Insurance Co. of Peoria, Ill..	3,000	12.00	36.00	6- 7-10
DORMITORY				
Ohio German Fire Insurance Co. of Toledo	1,000	12.00	12.00	11-10-11
Walla-Walla Fire Insurance Co.....	1,000	12.00	12.00	11-10-11
Globe & Rutgers Insurance Co.....	1,000	12.00	12.00	11-10-11
North State Fire Insurance Co.....	1,000	12.00	12.00	11-10-11
Dixie Fire Insurance Co.....	1,000	12.00	12.00	11-10-11
Milwaukee Mechanics Insurance Co.....	4,500	13.50	60.75	6- 7-10
Northwestern Nat'l Ins. Co. of Mil., Wis..	4,500	13.50	60.75	6- 7-10
German Fire Insurance Co. of Peoria, Ill..	2,650	12.00	31.80	6- 7-10
POULTRY HOUSE AND CONTENTS				
Walla-Walla Fire Insurance Co.....	1,000	15.00	15.00	11-10-11
Ohio German Fire Insurance Co. of Toledo	500	15.00	7.50	11-10-11

COMPANY	AMOUNT	RATE	PREMIUM	EXPIRES
Dixie Fire Insurance Co. of Greensboro...	1,000	15.00	15.00	11-10-11
Milwaukee Mechanics Insurance Co.....	1,000	15.00	15.00	6- 7-10
Northwestern National Insurance of Mil..	1,000	15.00	15.00	6- 7-10
BARNs AND CONTENTS				
German Fire Insurance Co. of Peoria, Ill..	2,000	22.50	45.00	12- 3-10
Northwestern National Ins. Co.....	2,000	22.50	45.00	12- 3-10
Farmers' & Mechanics', Lincoln, Neb.....	2,000	22.50	45.00	12- 4-10
Seattle Fire & Marine	2,000	22.50	45.00	12- 4-10
Milwaukee Mechanics Ins. Co. (Horse)...	2,000	22.50	45.00	6- 7-10
Milwaukee Mechanics Ins. Co. (Cattle)..	1,000	22.50	22.50	6- 7-10
Milwaukee Mechanics Ins. Co. (Sheep)...	500	22.50	11.25	6- 7-10
Northwestern National Ins. of Mil.(Horse)	2,000	22.50	45.00	1- 7-10
German Fire Ins. Co. of Peoria (Horse)...	1,500	22.50	33.75	6- 7-10
Northwestern National Ins. Co. (Cattle)..	1,000	22.50	22.50	6- 7-10
PRESIDENT'S RESIDENCE				
Milwaukee Mechanics Insurance Co.....	2,500	11.00	27.50	6- 7-10
GREEN-HOUSE				
Milwaukee Mechanics Insurance Co. of Mil.	1,200	30.00	36.00	6- 7-10
Northwestern National Ins. Co. of Mil....	1,200	30.00	36.00	6- 7-10
German Fire Insurance Co. of Peoria, Ill..	800	30.00	24.00	6- 7-10
DIRECTOR'S RESIDENCE				
Westchester Fire Ins. Co. of New York...	1,500	15.00	22.50	1-22-09
AGRONOMIST'S RESIDENCE				
North State Fire Insurance Co.....	400	10.00	4.00	11-10-11
Northwestern National Ins. Co. of Mil...	1,200	11.00	13.20	6- 7-10
EMPLOYEES' COTTAGES				
Northwestern National Ins. Co. of Mil....	1,200	11.00	13.20	6- 7-10
PIGGERY				
Dixie Fire Insurance Co.....	1,000	15.00	15.00	11-10-11
VETERINARY HOSPITAL				
Northwestern National Ins. Co. of Mil...	700	12.50	8.75	6- 7-10
RESIDENCES AT ST. GEORGE, UTAH				
Home Fire Insurance Co. of Utah.....	600	35.00	21.00	1- 1-10
Home Fire Insurance Co. of Utah.....	1,500	13.66	20.50	5- 1-10
BOILERS				
Hartford Steam Boiler Ins. Co. Hartford.	20,000	8.00	160.00	11-20-11
ORDNANCE STORES				
Sun Insurance Office, London, England...	1,968	.....	24.00	12- 5-11

Financial Report of the Secretary

From Dec. 1, 1906, to Nov. 30, 1908.

LOGAN, UTAH, Dec. 15, 1908.

To the Board of Trustees of the

Agricultural College of Utah,

LADIES AND GENTLEMEN: The following is a biennial report of the receipts and expenditures of the College during the biennium ending Nov. 30, 1908, with an inventory of the property under each fund.

Very respectfully submitted,

JOHN L. COBURN,
Financial Secretary.

I. THE COLLEGE.

(State, Morrill, and Nelson Funds.)

RECEIPTS.

Balance with treasurer Nov. 30, 1906.....	\$	459.70
Cash on hand (including revolving fund, \$500.00)		
Nov. 30, 1906		925.61
From federal government (Morrill and Nelson funds)		65,000.00
From State treasurer:		
On appropriation		125,251.95
General maintenance	\$	98,963.95
Restoration Mech. Arts bldg.		26,288.00
Interest on Land Grant fund..		16,200.79
Miscellaneous		38,331.61
Fees	11,566.30	
Sales	15,789.93	
Bookstore sales	9,809.20	
Dormitory (matron's salary re-fund 900.00)	1,017.00	
Unclassified	149.18	
State Board Horse Commissioners (licenses)		512.90
Total		\$246,682.56

EXPENDITURES.

General maintenance	\$199,523.71
Salaries	\$124,376.03
From gov't fund.	\$60,132.33
From State fund.	64,243.70
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Pay Rolls	12,219.14
Supplies	26,367.07
Fuel	6,051.16
Insurance	2,676.95
Light and power	4,833.00
Telephone and telegraph	713.90
Postage and stationery	1,453.51
Printing bulletins	4,871.82
General printing	1,646.96
Advertising	5,100.12
Experiment Station printing...	476.07
Repairs	4,071.38
Traveling expenses	1,645.33
Water tax	333.50
State fairs	746.59
Unclassified expense	1,941.18
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General equipment	11,889.64
Furniture	713.50
Machinery and implements	1,825.51
Scientific apparatus	1,451.15
Books, maps, etc.	2,515.36
Live stock	1,177.02
Unclassified	4,207.10
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Buildings and improvements.....	7,467.00
Addition to green-house.....	1,676.28
Main building	1,405.35
Residences	367.12
Campus and water works.....	207.73
Shops and barns.....	2,155.28
Light, heat and power plants....	324.53
Unclassified	1,330.71

Mechanic Arts restoration		197.02
Bookstore merchandise		9,010.19
State Board Horse Commissioners		198.34
New light and power plant		159.80
Balance		18,236.86
In hands of treasurer	17,393.22	
State fund overdraft	\$2,348.61	
Gov't fund balance	19,741.83	
<hr/>		
Revolving fund with treasurer ..	500.00	
Cash on hand	343.64	
<hr/>		
Total		\$246,682.56

II. FARMERS' INSTITUTES.

RECEIPTS.

From State appropriation	\$ 2,916.81	
Overdraft on treasurer (due from State)	84.47	
<hr/>		
Total		3,001.28

EXPENDITURES.

Overdraft Nov. 30, 1906	\$ 275.60	
Traveling expenses	1,262.60	
Printing	480.95	
Equipment	410.44	
Supplies and incidental expenses ..	571.69	
<hr/>		
Total		3,001.28

III. THE ARID FARMS.

RECEIPTS.

From State appropriation	11,541.83	
From farm sales	540.73	
Overdraft on treasurer (due from State)	485.35	
<hr/>		
Total		12,567.91

EXPENDITURES.

Overdraft, Nov. 30, 1906	494.97
Salaries	2,674.57
Labor	6,702.47
Publications	171.90
Postage and stationery	58.06
Chemical supplies	68.46
Seeds, plants and sundry supplies..	441.94
Tools, implements and machinery..	354.59
Traveling expenses	455.85
Buildings and repairs	499.96
Freight and express	182.73
Contingent expenses (including ex- hibits, etc.)	462.41

Total	12,567.91
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IV. IRRIGATION AND DRAINAGE INVESTIGATIONS

RECEIPTS.

Balance Dec. 1, 1906	\$ 520.92
From State appropriation	3,155.12
From U. S. Government (co-opera- tive work)	125.00
Overdraft on treasurer (due from State)	1,839.54

Total	5,640.58
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EXPENDITURES.

Salaries	\$ 3,032.50
Labor	1,642.25
Publications	393.42
Postage and stationery	38.15
Chemical supplies	31.46
Seeds, plants and sundry supplies..	73.00
Tools, implements and machinery..	14.55
Scientific apparatus	4.50
Traveling expenses	275.26
Flumes, weirs, etc.	125.67
Freight and express	2.80
Contingent expenses	7.02

Total	5,640.58
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V. SOUTHERN UTAH EXPERIMENT STATION.

RECEIPTS.

Balance Dec. 1, 1906 (including revolving fund, \$25.00)	\$ 34.85	
Received from State	557.20	
From farm sales	409.47	
Overdraft on Treasurer (on deficit)	4,733.44	
	<hr/>	
Total		5,734.96

EXPENDITURES.

Salaries	\$ 3,907.37	
Labor	899.20	
Publications	154.30	
Postage and stationery	78.25	
Seeds, plants and sundry supplies..	230.05	
Fertilizers (water tax)	27.20	
Feed stuffs (for teams)	73.50	
Tools, implements and machinery..	85.16	
Scientific apparatus	4.55	
Traveling expenses	93.40	
Buildings and repairs	30.00	
Freight and express	83.23	
Contingent expenses	43.75	
Revolving fund (in hands of foreman)	25.00	
	<hr/>	
Total		5,734.96

VI. CENTRAL UTAH EXPERIMENT STATION.

RECEIPTS.

Received from State	\$ 642.44	
From farm sales	3,985.96	
Overdraft on treasurer (on deficit)	7,207.02	
	<hr/>	
Total		11,835.42

EXPENDITURES.

Overdraft, Dec. 1, 1906	\$ 91.85	
Salaries	4,029.34	
Labor	5,688.93	
Publications	108.65	
Postage and stationery	64.14	
Seeds, plants and sundry supplies..	570.81	
Fertilizers (water tax)	78.18	
Tools, implements and machinery..	207.75	
Traveling expenses	117.30	
Building and repairs	220.68	
Photography .....	.25	
Freight and express	17.27	
Furniture and fixtures	57.50	
Contingent expenses	557.77	
Revolving fund (in hands of fore- man)	25.00	
	<hr/>	
Total		11,835.42

VII. EXPERIMENT STATION.

(Hatch, Adams, and Miscellaneous Funds.)

RECEIPTS.

Balance on hand Dec. 1, 1906.....	\$ 4,346.32	
Received from U. S. government..	49,571.94	
Hatch fund.....	\$30,000.00	
Adams fund	19,571.94	
	<hr/>	
Miscellaneous	9,387.76	
From U. S. govern- ment (co-operative work)	\$1,114.17	
Sales, etc.....	8,273.59	
	<hr/>	
Total		63,306.02

EXPENDITURES.

Salaries	\$ 25,719.54
Labor	14,035.80
Publications	916.92
Postage and stationery	1,237.39
Freight and express	115.87
Heat, light and water	670.92
Chemical supplies	860.88
Seeds, plants and sundry supplies..	1,498.62
Fertilizers (including water tax)..	209.75
Feed stuffs	5,559.68
Library	310.78
Tools, implements and machinery..	1,472.81
Furniture and fixtures	943.07
Scientific apparatus	994.69
Live stock	3,591.86
Traveling expenses	1,545.08
Buildings and repairs	1,395.40
Contingent expenses	1,562.87
Balance with treasurer	664.09

Total

63,306.02

VIII. RECAPITULATION.

SUMMARY OF RECEIPTS.

I. The College	\$246,682.56
II. Farmers' Institutes	2,916.81
III. Arid farms	12,082.56
IV. Irrigation and Drainage In- vestigations	3,801.04
V. Southern Utah Experiment Farm	1,001.52
VI. Central Utah Experiment station	4,628.40
VIII. Experiment Station	63,306.02

Total

\$334,418.91

SUMMARY OF EXPENDITURES.

I. The College	\$228,445.70
II. Farmers' Institutes	3,001.28

III.	Arid farms	12,567.91	
IV.	Irrigation and Drainage In- vestigations	5,640.58	
V.	Southern Utah Experiment Farm	5,734.96	
VI.	Central Utah Experiment Station	11,835.42	
VII.	Experiment Station	62,641.93	
	Net balance with Treasurer	4,551.13	
		<hr/>	
	Total		\$334,418.91

IX. TREASURER'S REPORT.

The following is a statement of balances in my hands as Treasurer of the Agricultural College of Utah at the close of business, Nov. 28, 1908:

College balance	\$30,919.61	
Govt' fund balance.....	\$23,015.46	
State fund balance (in- cluding Farmers' Insti- tute)	7,904.15	
		<hr/>
Experiment Station balance.....	4,766.72	
Hatch fund balance.....	1,872.99	
Adams fund balance....	1,902.32	
Miscellaneous fund bal..	991.41	
		<hr/>
Arid Farm fund balance...	117.55	35,803.88
		<hr/>
Irrigation and drainage investigations, overdrawn	1,839.54	
Southern Utah Experiment farm, over- drawn	4,362.86	
Central Utah Experiment Station, overdrawn	6,681.46	12,883.86
		<hr/>
Net balance		\$22,920.02

Yours truly,
ALLAN M. FLEMING,
Treasurer.

X. PROOFS.

I. The College:

The Farmers' Institute fund is included in the

Treasurer's report on the State fund.

Balance as reported\$18,236.86

Less Farmers' Institute over-

draft 84.47 \$18,152.39

Add outstanding warrants..————— 14,819.45

\$32,971.84

Less amount deposited since Treasurer's

report 1,208.59

\$31,763.25

Less cash on hand and revolving fund.... 843.64

Balance as per Treasurer's report.....\$30,919.61

III. The Arid Farms:

Overdraft as reported\$ 485.35

Less outstanding warrants 602.90

Balance as per Treasurer's report\$ 117.55

IV. Irrigation and Drainage Investigations:

Overdraft as reported and as per Treasur-
er's statement\$ 1,839.54

V. Southern Utah Experiment Farm:

Overdraft as reported\$ 4,733.44

Less outstanding warrants 370.58

Overdraft as per Treasurer's report.....\$ 4,362.86

VI. Central Utah Experiment Station:

Overdraft as reported.....\$ 7,207.02

Less outstanding warrants 798.24

\$ 6,408.78

Add amount deposited since Treasurer's re-

port 272.68

Overdraft as per Treasurer's report.....\$ 6,681.46

VII. Experiment Station:

Balance as reported\$ 664.09

Add outstanding warrants 4,196.44

4,860.53

Less amount deposited since Treasurer's re-

port 115.63

\$ 4,744.90

Adams fund money of 1906 still in hands of Treasurer	21.82
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Balance as per Treasurer's report	\$ 4,766.72
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XI. INVENTORY.*

November 30, 1908.

I. The College:

Land, 121 acres at \$200 per acre.....	\$ 24,200.00
Buildings (including fixed equipment, water works, sewer- age system and heating plant)	295,000.00
Administration	1,872.45
President's office	1,306.85
Secretary's office	378.60
Registrar's office	187.00

Departments of Instruction.....	70,866.75
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Agronomy	1,660.82
Animal Husbandry	2,116.67
Art	545.65
Bacteriology	319.15
Chemistry	4,193.41
Commerce	3,288.85
Dairy	2,550.45
Domestic Science and Arts.....	2,952.76
Engineering and Mechanic Arts	32,824.49
English	185.50
Geology and Mineralogy	781.10
History and Civics	52.00
Horticulture and Botany	7,058.15
Mathematics and Astronomy....	561.00
Military Science	71.41
Modern Languages	13.30
Music	2,539.00
Photography	192.75
Physics	1,843.41
Physical Education	1,930.23
Veterinary Science	638.70
Zoology and Entomology	4,547.95

Miscellaneous Equipment	23,765.54
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Furniture, etc., in assembly rooms, class rooms, society room, halls, etc.	4,377.11
Library, including books and peri- odicals	16,645.61
Bookstore equipment	320.60
Janitorial	56.45
Construction and Repairs	1,342.70
Dormitory	1,023.07

Total College equipment....	96,504.74
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*Not including supplies and Land Grant.

II. Experiment Station.		
Offices, reading room, etc.		2,307.75
Departments		16,669.24
Agronomy	3,718.53	
Animal Husbandry	3,487.95	
Chemistry	4,193.41	
Dairy	668.70	
Horticulture	782.30	
Irrigation	241.10	
Poultry	2,364.30	
Zoology and Entomology	795.95	
Veterinary Science	325.00	
Photography	92.00	
Total Experiment Station		
Equipment		18,976.99
III. Arid farms, buildings and equipment.....		2,225.85
IV. Farmers' Institute		571.95
V. Southern Utah Experiment Station.....		10,107.05
VI. Central Utah Experiment Station		6,718.00
VII. Bookstore merchandise		2,200.00
Grand total		\$456,504.58

XII. AUDITOR'S REPORT.

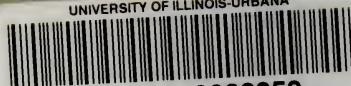
We, the undersigned, duly appointed Auditors, do hereby certify that we have examined the books of the Agricultural College of Utah, for the biennium beginning December 1, 1906, and ending November 30, 1908; that we have found the same well kept and classified; that they agree in all respects with the Secretary's Report, and that proper vouchers for all expenditures are on file and have been examined by us and found correct.

JOHN T. CAINE, JR.,
J. W. N. WHITCOTTON,
Auditors.

Very respectfully submitted,
JOHN L. COBURN,
Secretary.

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